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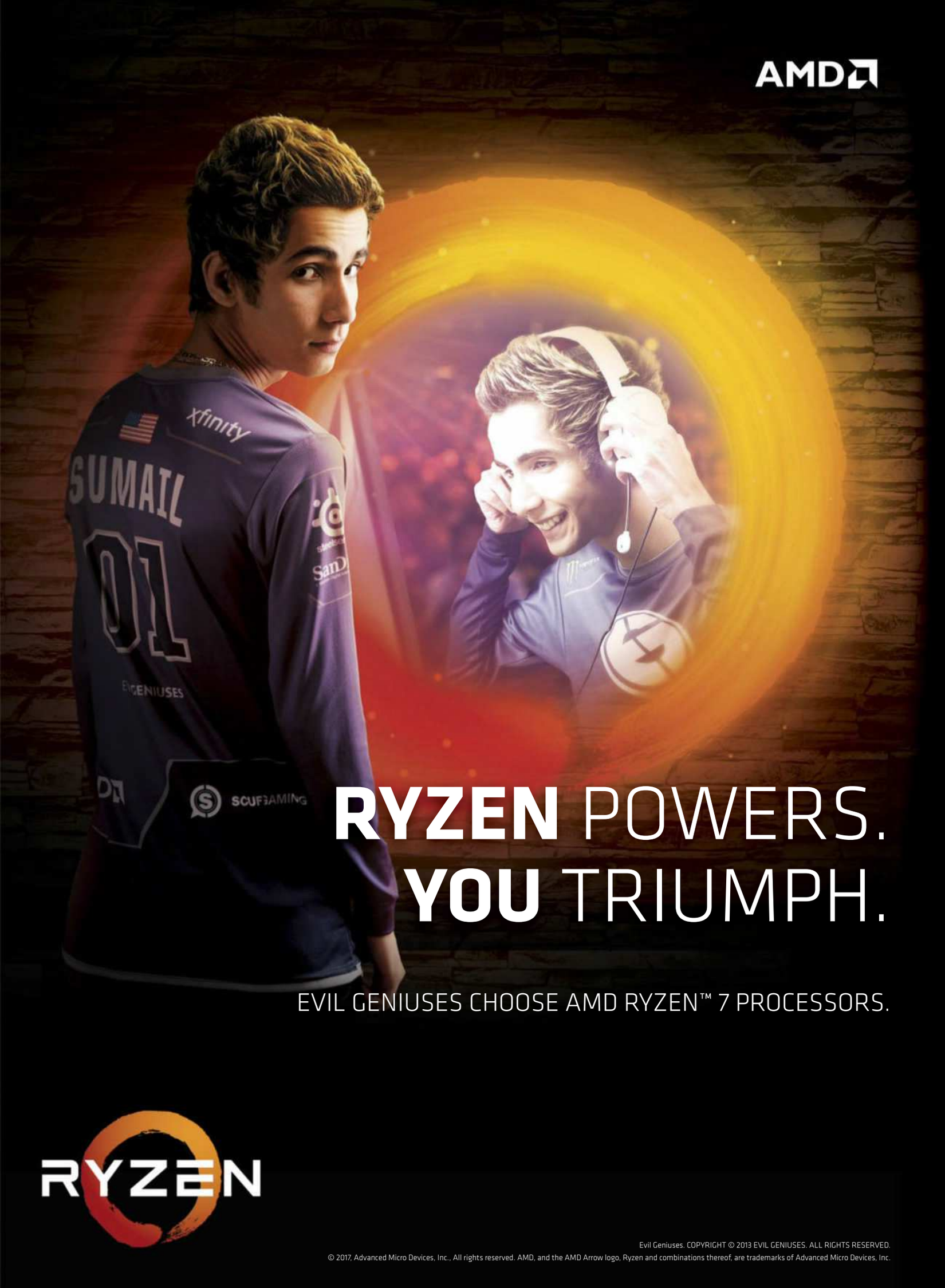

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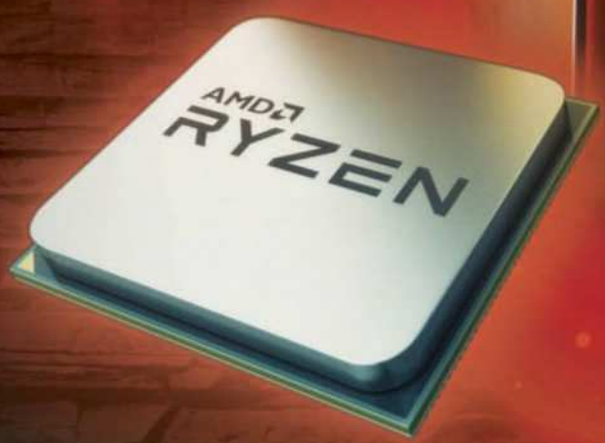

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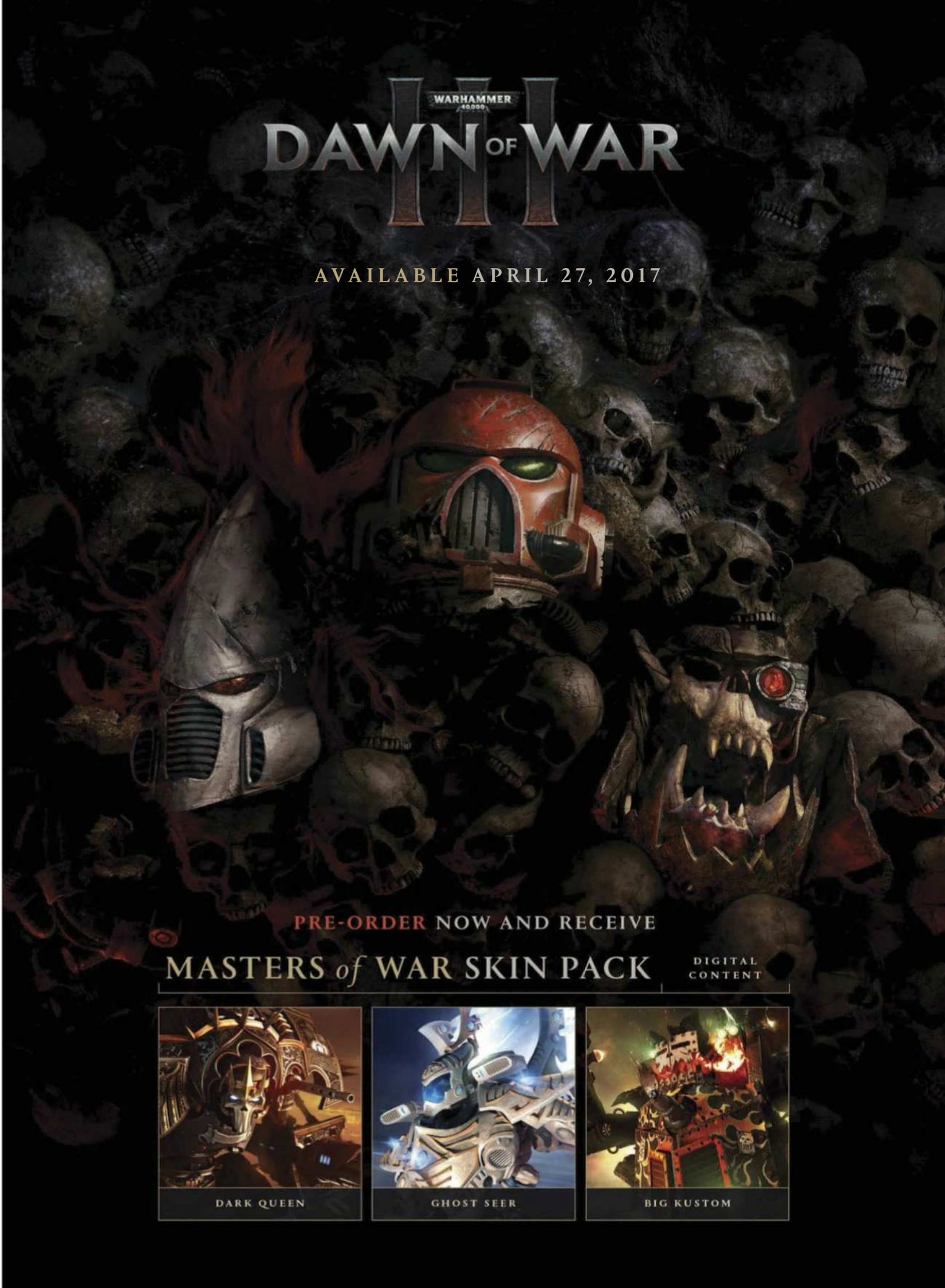
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>PCPP #261

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THE SURGE

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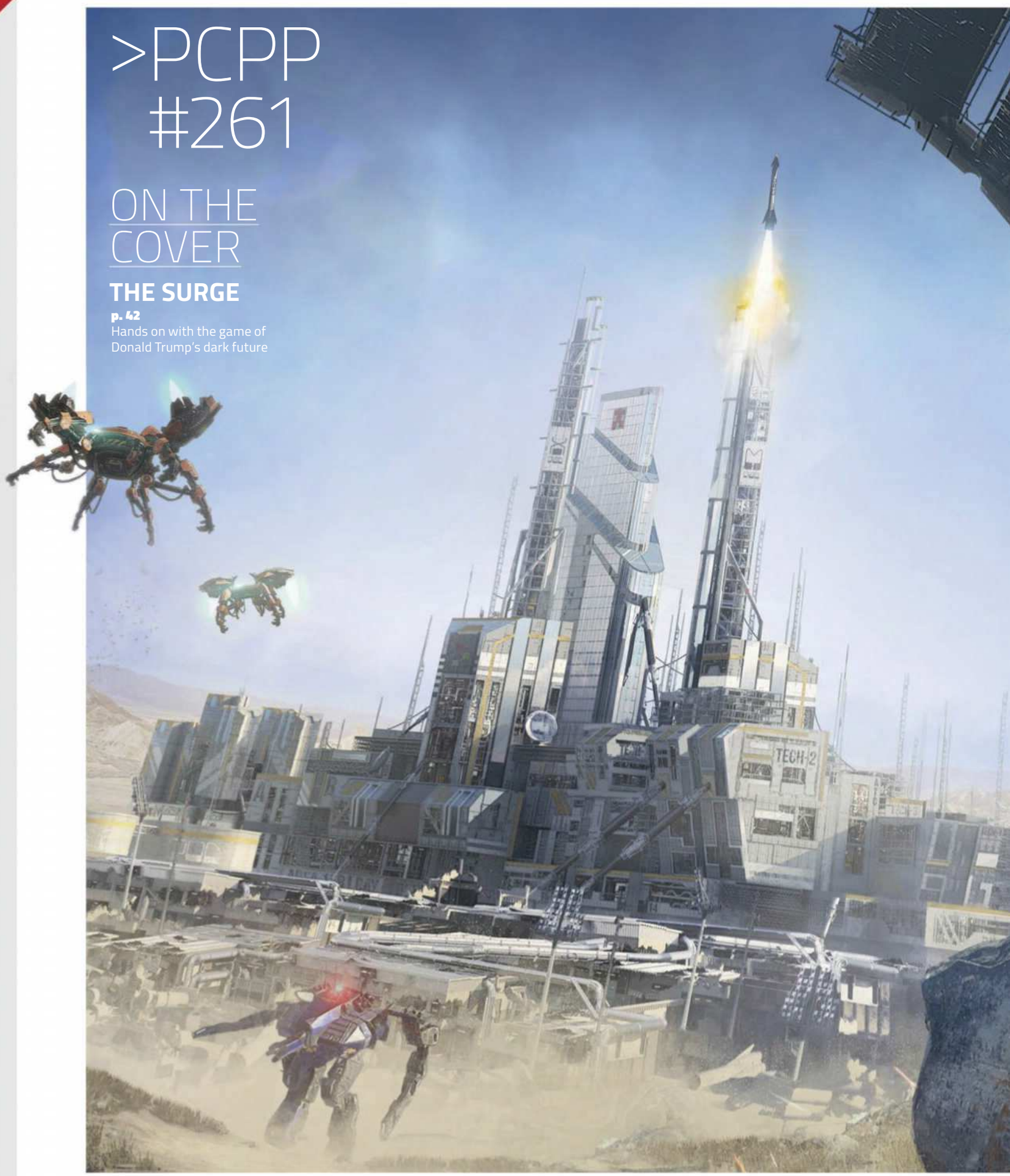
Hands on with the game of Donald Trump's dark future



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Is 2017 in danger of peaking too early?

2017 has been a pretty odd year so far when it comes to game releases. It's as though the year got a little too excited and finished early if you get my not at all subtle innuendo. So far this year we have had a startling number of AAA titles from big developers and distributors, with the likes of Mass Effect: Andromeda, Ghost Recon: Wildlands, Nier: Automata, Halo Wars 2, Resident Evil 7, For Honor, Sniper Elite 4, and more being released in the first three months of the year, and what seems to be the majority of other games being due by mid-September. Are companies becoming so afraid of releasing in a glutted Christmas/holiday season that they are delaying to the start of the next year, or is this year just a strange one overall?

On the tech front, this is the month when things officially got interesting again. The 1080Ti is here and it's a monster, but the most interesting tech factor at the moment is AMD releasing their Ryzen CPUs. Although the R7 chips are being outpaced by their similarly specced Intel counterparts for the most part, their release has already prompted Intel to drop the price of their chips to compete with the much cheaper Ryzen CPUs, and the release of the R5 should herald the same results. While I'm about the furthest you can get from being a free market libertarian, I do like seeing those odd occasions when the market does manage to sort itself out through competition. For the longest time, Team Red has prompted both Team Green and Intel to up their game or improve their prices to compete. When it comes to computer components, competition is always a good thing.

This issue also contains one of the most enjoyable, if gruelling jobs of the year - collecting and collating reader votes for Game of the Year. It's always fun to see what people think, and to be reminded of great moments in gaming. I like anecdotes, and every year you guys give them to me en-masse.

Daniel Wilks
Gothica Lolita Android
@drwilkenstein

QUOTES OF THE MONTH

"They're my grievances, not your grievances. You caused them."

"You high-fived on it. That's more binding than a handshake"

"I don't have the maracas"

PC PowerPlay

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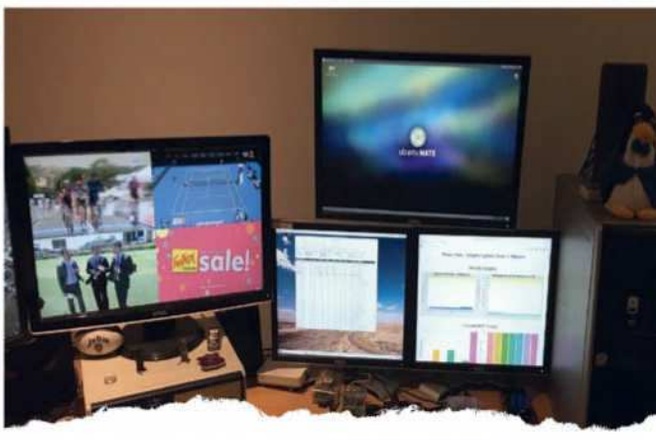

JASON, 39, QUEENSLAND

This month's MY PC brought to you by ROCCAT. SET THE RULES.

As you can see from the photos, I use multiple computers at the same time, including a personally built PC, mac mini, Linux server (Centos OS 7) and a few Raspberry PI's.

I spent around 9 months saving and deciding on the computer hardware, before purchasing the parts for the main PC, which I built myself in August 2016.

MOST IMPRESSIVE ELEMENTS:

- ASUS ROG GeForce GTX 1080 Strix Gaming video card
- 4K display
- Lots of storage, including using the Samsung 950 Pro 512GB M.2 SSD as the boot drive
- Hauppauge Win TV QUAD HD TV Tuner – as I enjoy watching TV, especially sport whilst working or playing games on the computer.

WHAT MAKES MY PC SO SPECIAL?

It's not just the one computer, but a connected system, with the ability to use one mouse and keyboard to control multiple computers. I use the software Synergy, which provides a free and paid version (see *symless.com/synergy/*). The software even allows you to cut and paste text and web links from one computer to another.

1. Such an elegant machine. Pity it's an Apple product.
2. Corsair's new line of cases certainly look nice.
3. One day we will upgrade to 4K
4. I think you need a few more monitors, mate. You must be short on screen real estate.
5. What are you running on your Pi?
6. No gratuitous suck up magazine stack, but the TIE Fighter is pretty cool.

JASON WINS!

Thanks to the good people at Roccat, Jason wins himself an excellent new Kone EMP. Enjoy!

WANT FREE STUFF? Send your MyPC entry today to *mypc@pcpowerplay.com.au*. Include the four most impressive elements of its hardware, your last upgrade, your dream upgrade, your favourite feature and what you think makes your PC special. Make sure to include your name, age and location. And last but not least, attach a 5MP or bigger image of your PC! No camera phone shots, and make sure it's in focus!

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THE GEFORCE GTX 1080 TI IS NVIDIA'S NEW FLAGSHIP GRAPHICS CARD

That top of the line Nvidia GeForce GTX 1080 you got last year is no longer top of the line. Nvidia has announced the GTX 1080 Ti, a souped up version of the GTX 1080, based on the Nvidia Titan X monster GPU. Core clock speed is down on the 1080 Ti (1481 MHz vs. 1607 MHz), and it "only" has 11GB of RAM versus the Titan X's 12GB, but every other spec you care to name is bigger and better on the 1080 Ti. The 1080 Ti also has an 11Gbps memory clock - a 10% increase over the 10Gbps clock found on the Titan and the GTX 1080. The downside to all this grunt is power consumption. The GTX 1080 Ti sucks 250W of juice doing its thing. Nvidia has also released a Founders Edition for the 1080 Ti, sporting an improved cooling system that allows for greater overclocking performance. The GTX 1080 Ti is out now.

CORSAIR MADE THEIR OWN MINI GAMING PC

Corsair has been pumping out quality RAM, power supplies, coolers, cases and loads of other PC hardware for a while now, but has never made their own PC - until now. All their PC accessory experience has culminated in the Corsair One Pro - a mini PC built from the ground up for gaming. The 12-litre cylinder packs in a Z270 motherboard provided by MSI and is cooled by a single 140mm fan on top that circulates air around the radiator that water cools the GeForce GTX 1070, 1080 or 1080 Ti GPU and your choice of Intel i7-7700 or 7700K CPU. 16GB of RAM, a range of SSD and HDD options and loads of modern inputs like Gigabit Ethernet, 802.11ac Wi-Fi, six USB port (1x 3.1 Gen2 Type-C, 2x 2.0 Type-A and 3x 3.1 Gen 1) round out this tiny package. Pricing starts at $2649 and stock is currently filtering through the retail channel now, so it should be available at your favourite PC store by the time you read this.

CHEAPER, MID-RANGE RYZEN CPUS ANNOUNCED

AMD's new Ryzen range of CPUs made a big splash earlier this year, bringing AMD back in from the cold and making AMD a competitor to Intel once again. The CPUs we saw released then were AMD's flagship models, but now we have info on AMD's mid-range CPU range offering, the Ryzen 5. Much of Ryzen 5 is the same as Ryzen 7. Overclocking is supported, as is ECC RAM, but what's different is the core and clock speed offerings. The Ryzen 5 1600X is the top end model, selling for $359, packed 6 cores, a base clock speed of 3.6 GHz, 16MB L3 cache and a 95W TDP. The Ryzen 5 1400 is the cheapest at $245 (with an included cooler) and is quad core, has a 3.2 GHz base clock and a 65W TDP. All four Ryzen 5 CPUs will be available in Australia from April 11.

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NEW NETGEAR ORBI MESH WI-FI UNITS WITH IMPROVED PERFORMANCE

Mesh Wi-Fi is taking off as an excellent way to improve signal strength around large homes and small offices, without having to run Ethernet cables around or use sometimes flaky or incompatible power over Ethernet adaptors. Netgear's Orbi was one of the first consumer mesh Wi-Fi systems and is still one of the best performers. Not content to rest on their laurels, there's now a new flagship Orbi kit - the RBK50. It has a 4x4 802.11ac radio that provides 1.7 Gbps of backhaul bandwidth so the additional RBS50 satellites can blanket your home with Wi-Fi and still achieve excellent speeds. An increase in RAM and CPU speed also give an overall boost in performance, particularly for heavy BitTorrent users. Netgear claim each base station will cover approximately 175sqm. The new Orbi units are out now and the RBK50 kit sells for $749.

INTEL RELEASES SMALL CACHING SSDS BASED ON OPTANE 3D XPOINT TECHNOLOGY

Intel has finally launched a product using its fancy 3D XPoint non-volatile memory tech, that is designed to be almost as fast as DRAM (used for RAM), but at the price of NAND (used in SSDs). The Intel Optane Memory SSD is an M.2 form-factor PCIe NVMe SSD in 16GB or 32GB capacities, designed to be used as a super-fast cache. Leveraging 3D XPoint's superior latency compared to traditional TLC/MLC NAND found on most SSDs, the Intel Optane Memory SSD can give your PC a boost on file intensive operations when used with a 7th-generation Intel Core CPU, 200-series chipset, Windows 10 and Intel's Rapid Storage Technology drivers. Those with older CPUs and motherboards need not apply. How much of a boost you'll get - we're not sure, but come April 24 we will know more. Intel plans to sell the 16GB Optane Memory SSD for US$44 and the 32GB variant for US$77.

DELL'S 8K, 7680X4320 , UP3218K 31.5" MONITOR

Just as everyone is getting used to 4K monitors, Dell has gone and released an 8K monitor. The 31.5" UP3218K has a whopping resolution, which equates to 280 pixels per inch and 33.2 megapixels. It's a top-notch display, with a 1300:1 contrast ratio, 400 nits brightness and 100% AdobeRGB, 100% RGB and 98% DCI-P3 coverage. With a 60Hz refresh rate and a huge 7680 x 4320 resolution, the UP3218K is obviously designed for professional graphics use, not gaming. To actually use the UP3218K you need a graphics card with two DisplayPort 1.4 outputs, as a single DisplayPort cable hasn't got enough bandwidth to push all those pixels around. Don't get too excited though - the UP3218K isn't on the Australian Dell store yet and Dell is charging US$4999 for it. Gulp. What's life like with only one kidney?

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OSVR HDK2

Come and stick this on your head at Upgrade Australia and see what all the fuss is about. The OSVR HDK2 has a proper 2160 x 1200 resolution display (1080 x 1200 per eye) and runs at a buttery smooth 90fps. That's what you need for real immersion without the headaches. And because the OSVR is open source it supports a wide range of games, software apps and peripherals. Over 300 titles on SteamVR!

So come along if you'd like a nice VR treat, give the OSVR HDK2 a go and lose yourself in a fantastic virtual experience!

BLACKWIDOW CHROMA V2

Through a combination of upgrades to the already widely respected BlackWidow keyboard, and a choice of three different mechanical switch types, Razer has created a new flagship keyboard in the form of the Razer BlackWidow Chroma V2. The three switches available cover the gamut of popular mechanical styles, with the two existing Razer keys, Green and Orange, offering tactile/clicky and tactile feedback respectively. The new Yellow switch, debuting in the BlackWidow Chroma V2 is a silent, linear speed switch that has a short actuation distance for rapid response and a silent linear action for smooth, comfortable gaming and typing. A row of macro keys and a large, padded, magnetically attached wrist rest, bright, easily controllable RGB lighting, USB pass-through and headphone port round out the features.

RAZER DEATHADDER ELITE

Ben here. I use this at home and it's bloody great. I like a simple design without fuss and this is it. I like a smooth natural feeling movement, and this has that. I prefer optical over laser, and this is indeed, optical, so the big benefit there is very precise movement in small areas (sniping!), and predictable big swooshes when I need to get from one side of the screen to the other quickly. All this is why the Razer Deathadder is our top pick for our Perfect PC in Kitlog. Come along to Upgrade Australia, give it a go and see if you agree! And, Razer will have another mouse at Upgrade Australia that's so new even I haven't seen it yet. Can't wait!

THE GAMING EDGE: GIGABYTE AND AORUS

Aorus, a premium gaming brand powered by Gigabyte, delivers a full spectrum of gaming products ranging from gaming laptops, motherboards, graphics cards, mechanical gaming keyboards, to many other gaming hardware and gear, offering the most extreme gaming experiences for enthusiasts worldwide!

RYZEN - POWERFUL IN PURPOSE. EFFICIENT IN DESIGN

The new Gigabyte Gaming and Aorus Gaming Motherboards will be built with support for AMD Ryzen CPU architecture. Ryzen, built on the AMD AM4 platform, has crucial technologies that ensure users have the most efficiency when it comes to performance and power consumption. With features like Pure Power, Precision Boost, Neural Net Prediction, Smart Prefetch and an Extended Frequency Range, Ryzen is ready to address the needs and demands of gamers and enthusiasts. Our Aorus Ryzen boards will feature RGB Fusion, the most advanced LED system on the market, with ability to customise colour output, colour zones and type of lighting effects via RGP Fusion App.

GEFORCE GTX 1080 AORUS XTREME EDITION 8G

Gigabyte, the world's leading premium gaming hardware manufacturer, is proud to announce its brand new premium Aorus line of gaming graphics card with the Geforce GTX 1080 Aorus Xtreme Edition. Packed with winning features such as VR front HDMI ports and RGB customisation, the VR-ready GTX 1080 Aorus Xtreme Edition is a powerful graphics card that pushes the gaming experience to yet again reach new heights.

The new Aorus graphics card is equipped with our legendary Windforce Stack Cooling module. In addition to the GPU, the VRAM and MOSFET are properly cooled to boost performance. Up front, the large copper base plate efficiently transfers heat from the GPU and VRAM to the heat sink. Additionally, excessive heat can be dissipated through the back as well with an extra copper plate.

The rest of the Windforce Stack Cooling module makes no compromises with the three 100mm stack fans and 6 composite copper heat pipes for powerful cooling. The use of double ball-bearing fans ensures the card will go the distance. The silent semi-passive fan profile allows gamers to enjoy gameplay in absolute silence when the system is running light or idle.

GIGABYTE UNVEILS AND EXPANDS THE GAMING SERIES WITH THE ALL NEW SABRE SERIES

Traditionally the sabre is a curved sword designed to be fast and light in order to slash through enemies and are used in many militaries as symbols of rank, honour and respect. The Gigabyte Sabre series is all about well-designed, fast and light gaming laptops that provide good all-round performance for all gamers around the world.

Besides the new and powerful 7th gen Intel Core i7 processor. The Sabre 15/17 is also equipped with the newly announced Geforce GTX 1050 Ti 4GB / GTX 1050 4GB/2GB graphics, gamers can now fully enjoy the latest performance from the Pascal architecture, with fluid 1080p high graphics settings, presented beautifully on 15.6-inch or 17.3-inch Full HD 1920x1080 WVA anti-glare displays.

The keyboard plays a big role in winning or losing a game; that is why the Sabre 15/17 comes with optimized 2.0mm travel scissor type keys for added tactility and precision. On top of that, the Sabre 15/17 features RGB backlight keyboard with 16.8 million colours (optional) and is controlled through the well-known Flexikey software, giving gamers endless possibilities when it comes to to customising their keyboard.

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HYPERX REVOLVER S

Extraordinary comfort and audio

The PC & Tech Authority and PC PowerPlay crew have long been fans of HyperX's brilliant Cloud series of headphones. PCTA editor Ben has them on his head for much of the working day, and they appear in both PC & Tech Authority's A-List and PC PowerPlay's Beast PC. Very few cans match the comfort (especially the comfort!) and sound quality of the $279 Revolver S.

So with interest we hope you are looking forward to trying the new Cloud Revolver S at the next Upgrade Australia. The upgraded model features several tweaks to the already excellent design. They feature the same 50mm drivers used in the other Cloud models, so they sound great. Clouds are fantastic for gaming as music, equally, with a clean yet punchy sound that's unadulterated by artificial processing.

The new Cloud Revolver S continues the HyperX tradition of award-winning comfort and competitive audio performance and has an in-line Dolby 7.1 sound card, and connects to your PC or console via USB. That means no software or drivers are needed on your PC or console – it just works, delivering high quality audio. If you prefer, the in-line sound card and USB connection can be removed allowing these to connect using the standard 3.5mm audio jack.

Backlit buttons on the clip-on audio control box allow you to quickly activate virtual Dolby Surround 7.1 audio, mute, and regulate mic and output levels.

Revolvers hold up magnificently to extreme volumes as well, whether it's booming gunfire or block rocking beats. It features three additional sound profiles – bass boost, flat and vocal equalizer modes – making it easier for gamers to swap between setups tuned for games, streaming, music or movies.

The mic is removable, too, and they have a lovely matte finish all over that looks and feels very cool indeed. HyperX has also improved the acoustics of the headband itself, so, while offering the strength of metal the band won't create any acoustic resonance itself.

There really aren't any alternatives in this price range, and they equal cans costing $500 or more for comfort and audio quality.

SAMSUNG PORTABLE SSD T3

For when data transfer speeds and serious capacity are paramount

For those who really need a portable drive with very fast transfer speeds PLUS easy portability, portable SSDs are a good option. Samsung's T3 is the class-leading option here. Its attractive tapered slab shape looks fantastic and is nice to hold in your hand. The case is sturdy metal and Samsung claims it can survive up to a 2m drop.

The big technical advances since Samsung's original T1 are the inclusion of USB Type 3 port as standard, its use of stacked 3D V-NAND to improve capacity while keeping costs reasonable, and the use of xFAT formatting to enable compatibility with PC, Mac and Android without the need to create OS-dependant partitions or make compromises with formatting.

Our testing yielded speeds of 435MB/s read, and 418MB/s write, exactly within expectations. That was via USB 3.1. The results were more or less identical on a USB3.0 port. It is also backwards compatible to USB2.0, albeit at lower transfer speeds – being a limitation of the old USB2.0 standard.

While the device itself uses the new Type C port, the included cable is Type C at one end and USB 3.1 (the traditional-looking USB, so it's backwards-compatible with 3.0/2.0 etc) on the other to attach to devices/PCs. We're seeing more and more devices and motherboards using Type C – including many new smartphones which rely solely on Type C.

The drive comes with an app that enables AES 256-bit hardware encryption. Once set up, the T3 Security Enabler prevents access without a password and that holds true whether you connect the drive via Windows, Mac or Android.

Capacities available are 2TB, 1TB, 500GB and 250GB.

Owning something like this is a delight. It makes things quicker and easier if you do a lot of file moving, and it's not a completely ridiculous point to make that there's a certain prestige cachet that comes from having such a premium portable storage solution that people will notice.

DESTINY 2 – WHAT WE KNOW SO FAR

Bungie's big sequel is no longer a console exclusive

Bungie has always said it has a 10-year-plan for Destiny, and now in year three, we have a better sense of where the shooter sensation is headed next.

Officially announced last month, Destiny 2 will release this spring and expand the experience with plenty of new worlds, fresh gameplay elements, and more customisation options than ever. And you'll get a first taste of it this winter with an early access beta test.

We're still fairly light on details, but this is everything you need to know for now.

THERE'S A NEW THREAT

Destiny 2 surfaces a new threat for your Guardians to take down: the Red Legion, led by the surely-horribly-evil Ghaul. Here's the official synopsis from Activision and Bungie:

"Humanity's last safe city has fallen to an overwhelming invasion force, led by Ghaul, the imposing commander of the brutal Red Legion. He has stripped the city's Guardians of their power, and forced the survivors to flee. You will venture to mysterious, unexplored worlds of our solar system to discover an arsenal of weapons and devastating new combat abilities. To defeat the Red Legion and confront Ghaul, you must reunite humanity's scattered heroes, stand together, and fight back to reclaim our home."

And now we have a narrative reason why your Guardian's progression in the first game won't carry over: with the Tower in ruins, all your stuff is gone. Womp, womp.

IT'S COMING TO PC TOO

While the original Destiny was a console exclusive across PlayStation and Xbox platforms, the sequel will also start off on PC, as well as PS4 and Xbox One. Last-gen consoles were cut out of Destiny's future back when Rise of Iron skipped PS3 and Xbox 360.

We don't have any sense yet if the PC version will vary at all in approach, besides sure support for keyboard and mouse, but there's an intriguing wrinkle here: the possibility of cross-platform multiplayer support. We've seen it with select games, like Rocket League, which is compatible between PC and PS4, as well as PC and Xbox One… although not between consoles just yet.

WE HAVEN'T SEEN ANY GAMEPLAY

Between the reveal trailer and the hilarious teaser, we have a sense of the tone that Destiny 2 is trying to strike here – plenty of personality and humour (thanks Cayde-6/Nathan Fillion), for sure, while keeping the gung-ho sci-fi edge.

However, we haven't seen any actual gameplay at this point… nor do we have any hard details from Bungie on what to expect. The official fact sheet has generic statements like "gameplay activities for all types of players" and "new worlds and stunning environments to explore," but what will that really mean once you're loaded up and on the hunt for loot?

No clue. But we'll find out on May 18: that's when Bungie will host a livestream event to showcase new gameplay and spotlight the array of additions coming to the game. So mark you calendars, Guardians.

IT'LL HAVE A BETA THIS SUMMER

Luckily, we won't have to wait long after the livestream to actually get our hands on Destiny 2: Bungie has a beta test scheduled for sometime this summer, and we imagine that it will be available across all three platforms at some point.

Don't be surprised if PlayStation 4 gets first crack at the beta, as it did with the first game (which also had a PlayStation-exclusive alpha before that). Activision still has an exclusivity deal with Sony that grants special content to PS4 owners once the full game arrives, and we imagine early beta access will also be part of that alliance.

START SAVING FOR SEPTEMBER

There's no date yet for the beta, but we know when we'll get the full game: 8 September worldwide, on all three platforms.

In addition to the base physical or digital game, there will be a couple of special editions of varying extravagance. The Limited Edition set includes the game, expansion pass for two big DLC add-ons, premium digital content, and a fancy Cabal-themed collector's box with a few little trinkets inside. That one will sell for US$100.

And if you really, really love Destiny, then you might want to start socking away cash for the Collector's Edition, which has everything from the Limited Edition along with a real, wearable Frontier Bag. It can be used as a backpack or messenger bag and includes a solar panel USB charger with light, paracord, solar blanket, and a 15" laptop/tablet sleeve. That bundle will set you back a stunning US$250.

It may well be all quiet on the Destiny 2 front until the gameplay livestream on 18 May, but we'll let you know if any other exciting details emerge in the meantime.

S.T.A.L.K.E.R. LOST ALPHA DEVELOPER'S CUT IS COMING TO PC

It's time to go back into the Zone.

Few games matched S.T.A.L.K.E.R. in terms of pure atmosphere, or for - at the time - it's jaw-dropping visuals. It's also remained a firm fan favourite over the years - all of whom will no doubt be very pleased to see that the dezowave mod team are about to release the Lost Alpha Developer's Cut.

Lost Alpha was one of THE mods of 2014, and the new Developer's Cut is the game the team always wanted to release. It's not perfect - even they admit they can't squash all the bugs - but it's as smooth a game as the team can make.

"We admit that the release version wasn't as stable as we wanted it, but it was a rushed decision after the unexpected leak, and that's precisely why we're giving ourselves just a bit more time - to squish the greatest bugs, so DC will be a more polished game than vanilla Lost Alpha was."

That said, there will be post-release work done to deal with anything that pops up once it's in the hands of its fans. And that date is not far away - the Lost Alpha DC will be ready to go on April 26.

Which just happens to be the 31st anniversary of the Chernobyl disaster. Good... timing?

PAX AUSTRALIA REGISTRATION OPEN NOW!

The early bird gets the PAX tickets. Or something like that.

Good news PAX fans! Ticket registrations are open now!

You can go here to get your ticket: http://aus.paxsite.com/registration. Current early bird pricing gets you a single day for $65, a three-day pass for $165, and additional $45 if you want to take your own PC along for some LAN gaming fun, which gets your storage space for your precious machine.

Tickets are sold on a first-come, first-served basis, so get in now if you want to secure your spot for one of the best gaming and geek events of the year.

See you there!

WW2 SHOOTER DAY OF INFAMY LEAVES EARLY ACCESS

It's time to storm the beaches. Again.

Remember when we were all sick and tired of World War 2 shooters? It seems like only yesterday, but the fact is we kinda miss those days of classic Call of Duty, of Medal of Honor when it was still good, and the amazing Day of Defeat mod for the Source engine. New World Interactive feels much the same, and Day of Infamy is its answer.

And now, Day of Infamy is coming out of early access, releasing on Steam last month.

The game launches with ten maps, features class-based gameplay, and a unique system of character progression that unlocks skins representing different units of the conflict. We've played a little - finding populated servers was a challenge while in early access - but if you can find a full server it's a hoot of a game. Man, I'd missed the sound of the M1 Garand!

Day of Infamy retails for $US19.99.

TOTAL WAR: WARHAMMER II ANNOUNCED

Total War: Warhammer III Guaranteed

Creative Assembly has announced the 2017 release of the second game in what they also announced would be the Total War: Warhammer trilogy. The new game will take place in the Western regions of the Old World and will feature a campaign that introduces four new races, the High Elves, Dark Elves, Lizardmen (the only race native to the lands) and a mystery fourth. Although speculation as to the identity of the fourth playable race (before DLC adds more) is worth less than the paper it's written on, our picks for likely races are the Beastmen or one of the Border Lords. The Beastmen make a good introduction to a chaos aligned but mostly independent army, and the Border Lords leave avenues for more naval combat in the future. We'll let you know how right or wrong we are when Creative Assembly releases more information.

MORIARTY: ENDGAME VR LAUNCHES

Holmes' greatest foe invades Steam

Transmedia Group, an australian multi-disciplinary content creation group with experience in film, installation, VR, education and more has just launched a first-of-its-kind comic through Steam. Moriarty: Endgame VR is based on the Image comics Moriarty series by Daniel Corey and Anthony Diecedue and tells the story of an ageless Moriarty and Sherlock Holmes in a post-apocalyptic future, gearing up for one final reckoning. Rather than just showing the comic in VR, Endgame instead brings users into the comic, allowing them to look around the panels rather than simply at them. It's only a short experience but the effect is impressive. Hopefully this proof of concept will be used for more VR comics in the future.

MAD CATZ GOES BANKRUPT

Now investors rather than catz are mad

The manufacturer and distributor of Mad Catz branded peripherals and Tritton headsets has voluntarily filed for bankruptcy in the Canadian courts. The moves comes after the company's Board of Directors set up a special committee in 2016 to look into ways of shoring uop losses and maximising shareholder value. Karen McGinnis, President and Chief Executive Officer of Mad Catz, stated, "Regrettably and notwithstanding that for a significant amount of time the Company has been actively pursuing its strategic alternatives, including various near term financing alternatives such as bank financing and equity infusions, as well as potential sales of certain assets of the Company or a sale of the Company in its entirety, the Company has been unable to find a satisfactory solution to its cash liquidity problems. The Board of Directors and management would like to acknowledge the outstanding efforts of the Company's employees in support of its business, especially during the time that the Company faced financial difficulties. The Company would also like to thank the vendors and professional service providers who have supported the Company's efforts during this time."

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Pigs in Space

Is it all ogre for BioWare?

Was the bad publicity surrounding Mass Effect: Andromeda a tad overblown? Yes. Was it funny? Absolutely!

Those who sought to critique the new BioWare production largely didn't bother with hyperbole or swearing. They simply shared clips of the game. In March the internet was awash with vids of NPCs glitching in and out of existence, flitting about at super-sonic speeds, or delivering exposition while locked in T-poses. Even when functioning perfectly, they all had glassy stares and terrible posture. While much of the dialogue was cringe-inducing, some was so nonsensical it sounded like it hadn't even been proof-read before being given to the voice actors.

Those who sought to defend ME:A mostly used rhetoric. That is, they employed deft persuasion techniques to discourage people from believing their lying eyes. One indie dev's hot take on the terrible facial animations: "If you think you can find 'the person responsible for x' in a 300 person AAA team, you're deluded about how AAA Dev works." Of course! It's all so obvious! One single person amongst 300 can't possibly be completely responsible. That means that no-one is responsible, and nothing is wrong! Case closed!

The Snark and the Shill, like Yin and Yang, are locked in perpetual combat until the end of all things – until the death of death. But beyond the spin, it's a straightforward matter to get to the truth. Andromeda was launched on March 21, just before the end of the Fiscal Year as defined by EA's accountants. EA clearly wanted to bring the long and costly production process to a close, and to get some profit on the books before the end of Fiscal Year 2017.

Yet the game clearly wasn't quite done. Mass Effect is a franchise with an established formula, but a smooth production process was impossible because of the recent departure of some key BioWare talent.

Mass Effect creator Casey Hudson left BioWare on August 7 2014. Andromeda game director Chris Wynn announced that he was leaving BioWare on December 22 2015. Writer David Gaider announced he was leaving on January 22 2016. Lead writer Chris Schlerf confirmed he was off the project on February 15 2016, and senior editor Cameron Harris announced he was leaving the video game industry entirely on March 4 2016.

> "The Snark and the Shill, like Yin and Yang, are locked in perpetual combat until the end of all things"

Without their institutional knowledge, their hard-working replacements simply couldn't get all the kinks out in time. Any developer will tell you that games simply do not want to be made – their work is vexing and exhausting, and bugs are often being squashed right up to the last minute. And if you don't have that last minute to work with, then don't be surprised if an over-worked animator accidentally rigs a gun model in backwards. And yes, that infamous glitch made it into the finished product.

Why did the BioWare veterans leave? One could infer that they were unhappy with the direction the company had taken since being bought out by EA. As with Origin, Bullfrog, and Westwood, the unique character of BioWare was being inexorably dissolved, and they didn't want to stick around to watch.

Ultimately the responsibility lies with Greg Zeschuk and Ray Muzyka, who chose to sell BioWare (or rather, BioWare/Pandemic, as it was then known) in 2007. But arguably BioWare's death warrant was written in 2005, when the company's fearless leaders took on 300 million dollars in venture capital to fund the Pandemic merger. A lot of that cash was funnelled into The Old Republic, back when competing directly with World of Warcraft still seemed like a good idea.

Venture capital is sometimes called 'vulture capital' – it's not a charity. They expect big returns, and in this case they got them. VG Holding Corp, encompassing BioWare and Pandemic, was sold to EA in a US$860 million deal, including US$620 million in cash.

Are you a saint, dear reader? If someone dangled half a billion dollars under your nose, would you be tempted to compromise your artistic integrity? If you're lucky, it's a decision you'll never have to make. But like Patherfinders exploring new galaxies of high finance, Reg Zeschuk and Ray Muzyka had to make an agonising choice in pursuit of their noble mission. We are now seeing the results of that choice. Though please don't send Zeschuk or Muzyka any angry letters. They both quit BioWare in 2012. PC

JAMES COTTEE is still waiting for BioWare to make a Shattered Steel sequel

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THE GALAXY EXPRESS

The creators of Sunless Sea are flushed with success from their latest Kickstarter campaign. We talk to Failbetter Games CEO **PAUL ARENDT** about how Sunless Skies will combine text and graphics into a spicy melange gamers have never tasted before...

WHO PAUL ARENDT
WHERE FAILBETTER GAMES
WHY SUNLESS SKIES

Paul Arendt is the CEO and art director at Failbetter Games, the UK indie studio behind the cult hit Sunless Sea, a roguelike game of subterranean naval exploration. In the sequel players will clamber aboard a train-like Victorian spaceship and wander amongst unknown stars. The setting, the Fallen London universe, is Lovecraftian, whimsical, and very, very odd. So much so that when we recently had a chance to chat with Paul he almost struggled to define what his new game was all about – he found it much easier to describe what it isn't.

"What it isn't at all is what you might call Stanley Kubrick space. Physics is much more relaxed [*laughs*]. You can breathe out there, briefly. You can stay alive for about a quarter of an hour before the cold will kill you. The stars are, in fact, alive and sentient. And major power players in that area. It's very much not lasers and Lagrange Points and gravity and so on."

A fusion of top-down exploration and choose-your-own-adventure text encounters, Sunless Sea generated a lot of feedback, all of which Paul absorbed when conceiving the sequel. "First of all, I think people were all very keen on the story-telling. And the way we give people the chance to inhabit the world in their own way, and to uncover stories at their own pace. And I think the roguelike elements of the game, whereby death was permanent unless you turned on a sort of Merciful Mode, had a double effect. On one level it made decisions feel like they had real consequence. It made the game very frightening, particularly when you were lost and far away from home with very little health. And there was just generally a sense of peril, of threat, of loneliness, of any-moment-could-be-your-last.

"So that was great. We wanted to keep all that. But at the same time, particularly as you start getting into the late game, the fact that dying causes you to restart also meant that you were replaying a lot of content. And this is the tricky thing about trying to blend roguelike mechanics with story games. You tend to be playing the story again. And occasionally it's a bit strange, because we have a legacy system whereby you might be playing your own son or daughter. But seeing the same characters, and those characters not necessarily acknowledging that you are a new person. So that was one of the key bits of feedback for us. Trying to square the circle of providing that sense of threat and danger, but without having to make people repeat content all the time."

> "the experience is more about heading outwards into the unknown, stopping off, and then exploring a new area"

Paul's team is attacking this problem from several angles. "In Sunless Sea, Fallen London was basically the only port where you could do a large number of things, where you could fix your vessel, where you could buy a lot of products, where you could talk to a lot of your contacts. So that meant that essentially every trip had the same loop, where you head out into the unknown and then you've got to make it all the way back home. In Sunless Skies, we're not really working like that. We have a number of major ports, all of which will sort of perform the same function. The idea is that the player experience is more about heading outwards into the unknown, stopping off, and then exploring a new area. You're more nomadic."

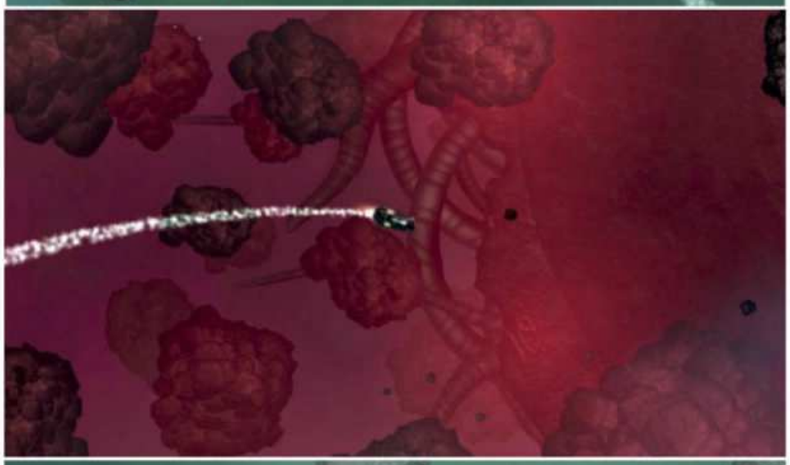
This ties in with a new system to prevent replaying early game content excessively. "Once you hit a major port, your progress on major stories up to that point is fixed. So if you've made a big decision just before arriving at this port, and then you head out, and then you die, then your successor, be they your child or your inheritor or whatever, is also going to have to live with that decision. That world state is unchanged. But everything you've yet to discover is shuffled around, and subject to some procedural generation choices. That means that heading out anew will be different each time. It's a refinement of the system."

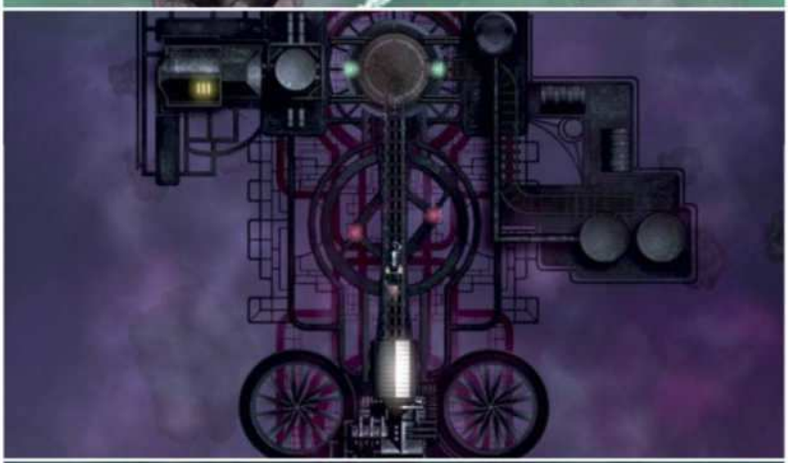
Paul didn't want to give too much away about the space oddities that players will encounter, but he did frame the Sunless Skies experience in terms of culture clash. "One of the big conflicts in the game is the conflict between that go-getting, can-do Victorian Empire and the wild, untamed alien wilderness that they are trying to colonise. As the Victorians inevitably did. But this is an environment that's fighting back."

One of these factions is called the Scribe Spinsters: essentially flying wooden librarians. "They wear dresses made from lost pages of the books they were trying to protect. So they'll be flying around, causing trouble for you."

Just to make things even more complicated, Paul told us that Sunless Skies is but one possible future of Fallen London, rather than the canon future. "The whole story how Fallen London ended up under London, whether other cities ended up there as well, whether they continued their existence on the surface, is an enormous ball of lore and secrets that we could spend all afternoon talking about."

Failbetter are also upgrading their graphics technology to better hint at the lurking horrors writhing in the void beyond human space. "While the action takes place





on a 2D plane as before, we do have some parallax scrolling technology that allows us to do a lot more depth. In addition to the monsters you'll fight on the surface, I'm rather hoping that we'll have some giant, roiling, tentacle-y mushroom-y monsters way down there in the depths below."

The ship-to-ship combat in Sunless Sea was completely overhauled during development, and even then Paul wasn't 100% happy with it. With Sunless Skies his team is trying a new tack. "One of the key differences, I think, for me, is that with a sea ship you have very strong limits on manoeuvrability. They go forwards, they go backwards. They turn. Slowly. And a lot of what makes combat interesting and satisfying for me is the idea of avoidance. And the idea of strategical positioning. Obviously, now we're in space, we're not bound by those constraints. So we can potentially have strafing, and quite sharp and nippy manoeuvring, more interesting placement, and so on."

They've already done an enormous amount of prototyping for the space combat system. "We're not interested in making a fast-paced shoot-em-up. So our hope for it is that it will be direct fire-based, with an element of skill and strategy in the positioning. But still quite measured. And the other half of that is balancing rewards so that the decision about whether to enter combat – the risk versus reward decision – is a consistently interesting one."

Another core feature that will be evolving in this sequel is the concept of 'text as a reward.' "One of the things we're experimenting with at the moment is bringing incidental messages, log book messages, in to the game world. Because this is the sort of visual imagery that we've tried before on trailers and was very successful. And we thought it would be wonderful if you could be sailing around in this space and have the words of your log book appear in the same space as your ship, as you're sailing around it. We're just looking at all sorts of ways of bringing text and imagery together."

One aspect of Sunless Sea that truly surprised Paul was the terrifying power of words and pictures acting in concert. "There's an enemy in Sunless Sea called Mount Nomad, which is essentially a sort of floating mountain. And the actual asset, the piece of art for that, is maybe 100 pixels high. Maybe 200 at most. It's a little bit larger than the player ship. And I always felt at the time: 'It's just not impressive enough. People aren't going to be scared by this.' But actually, because of the way it behaved, and because of the way it was set up in the story, players looked straight past that, and into their imaginations, and saw this terrifying thing, and Mount Nomad became this terrible nemesis. We got loads of fan art about it on the Steam page.

"That taught me that words and pictures reinforce each other in ways that are often really unexpected. If you limit, to an extent, a player's access to visual information, and you fill in those blanks with words, then they will do a lot of incredible imaginative work for you. Finding the balance between actually showing something and only hinting at it is this incredible fruitful area to play in."

Sunless Skies is due to enter early access this August, and is due to launch in May 2018. You can find more details at *failbettergames.com*. *JAMES COTTEE* PC

Without a Fight

Because you can't spell Meghann without Meh.

Various women in my social media circles recently raised an indie title on Steam that was obviously designed to tap into an anti-feminist sentiment, in a nasty kind of a way. (Though the developers had a disclaimer that it wasn't meant to offend, of course.) An even greater number of my male friends were discussing the same game with their eyes rolling identically. I saw a couple of games journalists planning opinion pieces about it and I paused to consider why I wasn't doing the same.

It's not like I never write about these issues. Many years ago, I wrote furious limericks when people assumed Hex was handed her Good Game gig because she was a gal. And I interviewed a bunch of women over six pages in PCPP one time. But, no, generally this page is about my constant oscillation between hardcore and ditzy gamer, making Geralt unequip his shirt and my personal projects, as you know. You could argue that simply being present is a feminist act, possibly, but I am generally unwilling to engage more explicitly.

I wouldn't not write about a deliberately anti-feminist game because I was worried about giving it oxygen. Simply, the game sounds genuinely uninteresting and, for that reason, it would be difficult and pointlessly time-consuming to write about. There are people who write amazing feminist videogame critique. Certainly sexism and lack of representation affects me sometimes, but I haven't put enough thought into these topics to be able to write something properly meaningful or useful, on a regular basis. It's not because I don't want to, just because it's a complex issue that's easier to eschew than eloquently understand.

Like when my kids told me they'd thrown projectiles at a photo of a certain, newly-elected, US President at the school fete, and were conflicted about whether they'd enjoyed the experience. I was like, "Maybe next time you could just ignore it and find something to play that feels properly good and/or fun." Concurrently, although "no indie too small or too strange" has become "my brand" in recent years, I put every game featuring said president on the "not seeing" pile at PAX AU last year. Taking my own Mum-advice always seems smart, even when contradictory.

> "I saw journalists planning opinion pieces and I paused to consider why I wasn't"

Is it fair to walk past developers because I don't like their content? Have you seen other games journalists at work, and how many hopeful indies they completely avoid for literally any reason? My new "nope" rule did mean that I skirted a whole university stand, due to its prominent US election content, as well as a nice, younger developer who I'd met the previous year, due to his adding of the presidential candidates to his dueling game. I just don't find tangential sexism, racism and homophobia funny, even if it's dressed up as edgy or just silly.

I do imagine there's some great potential film, game or artwork related to America's current political climate, but it ain't "Whack a Candidate and Watch 'Em Cry." Do people feel good about spending their precious creative energy making these games? Maybe they do. Or, maybe that's a specious point, because the creators of great games, both from technical perspectives and for reaching vast, appreciative audiences, aren't always known for their positivity, anyway. "Feeling good," is a multifaceted construct, after all, despite me telling my kids to rely on their gut.

Further, I often find even feminist initiatives falling short of what "feels right." One woman I've known since school is a financial analyst. She won an award for surveying the women in her building and getting the temperature raised a degree. But she's also great at her job. Each year, Australia has its Women in Games award which recognises many of games' inspirational female people, but fails to recognise many more, thus harmfully and pointlessly dividing the group? Not having been on the list, raising this is easily interpreted as sour grapes on my part, illustrating the problem.

Above, I mentioned that there are great feminist games writers and that that's not really me. Hence, this poorly written column sounds like I'm complaining. No, I am complaining, but mostly because I want opt out of engaging with games that "satirise" feminists and politics, and initiatives that don't "feel right," but also that the disappointing feeling of engagement being necessary, remains. If I don't play or discuss an anti-feminist game, I probably just don't care about it. But, thinking briefly beyond, "Meh," in this case, has been useful, if only to me. PC

MEGHANN O'NEILL wonders if you can get a Women in Games award without having to frock up for lunch. That's prohibitive. (Her friends had a betting pool organised for whether she'd wear a dress to her own wedding.)

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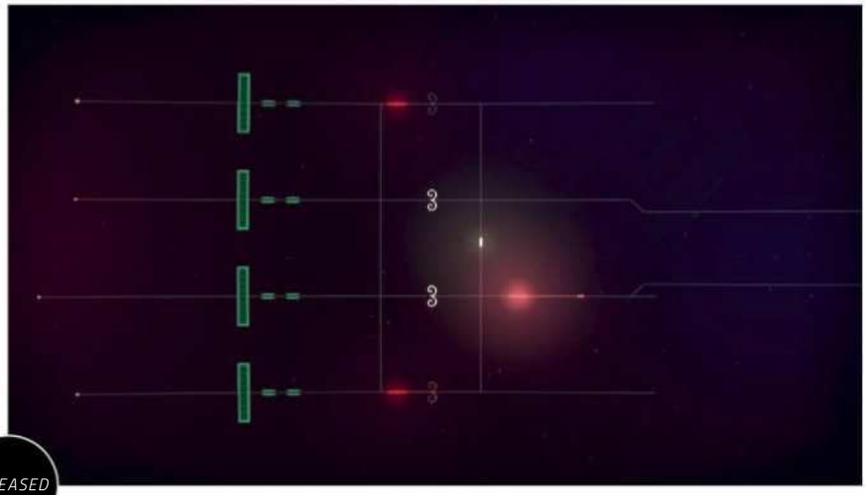
A Collection Aside

MEGHANN O'NEILL plays every indie game she's given a key for, if sometimes only briefly, those featuring US presidential candidates notwithstanding. This month, 33 games came in and she somehow ended up with all but half a page from the puzzle genre. This did, however, allow her to compare aspects of level design that often get overlooked in reviews. And there's a mix of platforming, minimalist and co-operative elements within.

LINELIGHT

DEVELOPER MY DOG ZORRO
PRICE $10
linelightgame.com



RELEASED

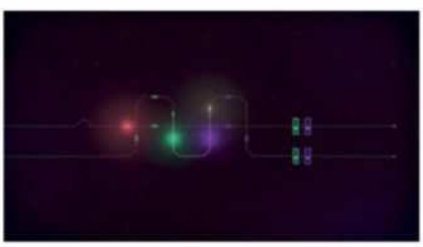
Always, while I'm playing the many indies for PC Powerplay, I blather about them on Twitter. People reply with all sorts of insight and other perspectives. In Linelight's case, I was trying to pinpoint a metaphor evoked by the co-dependent interaction between my little white line and its orange counterpart in World 2. I'd said that it was like having a shared journey with a dangerously indifferent other, but the game's account replied, "In ordering a coffee, you only experience a fraction of the barista's complex life. Simply a mutually beneficial passing."

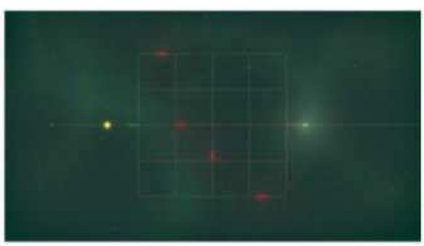
On reflection, this describes my experience even more closely. Linelight is a minimalist puzzler whose empty spaces prime the imagination, much like the way Expand did for me, only without the soul-crushing sadness. This game just feels exceptionally nice to play. "Nice" isn't a word I'd generally use to describe something I like this much, but that's what it is; easy to understand, pleasing to the eye and ear, incremental and clever, rather than difficult. I was never stuck for more than a few moments, nor frustrated in an unwanted fashion.

You're a bright section of line, chasing along a winding thread. In the first of six worlds there are gates for manipulating tangles in your path, and bright red lines to elude. It's an introduction to how everything moves that doesn't waste a single possible configuration or opportunity, also without teaching explicitly. You'll remember these lessons in World 2, however, where you have a measure of control over orange lines, but only if you understand how to use them. By World 3, you're manipulating tethers, easily relying on concepts you've forgotten you know.

Interestingly, apart from the additive nature of new mechanics, complexity doesn't increase significantly over the course of the game. Apart from some larger puzzles towards the ends of worlds which require careful timing to complete, and the optional objectives that burn brightly on your map until you go back and touch them, each little scenario to solve is no more than a clever moment springing from some aspect of design. As my 9 year old put it, "Same thing, but another switch, so it's different! Well, now the designers are just showing off."

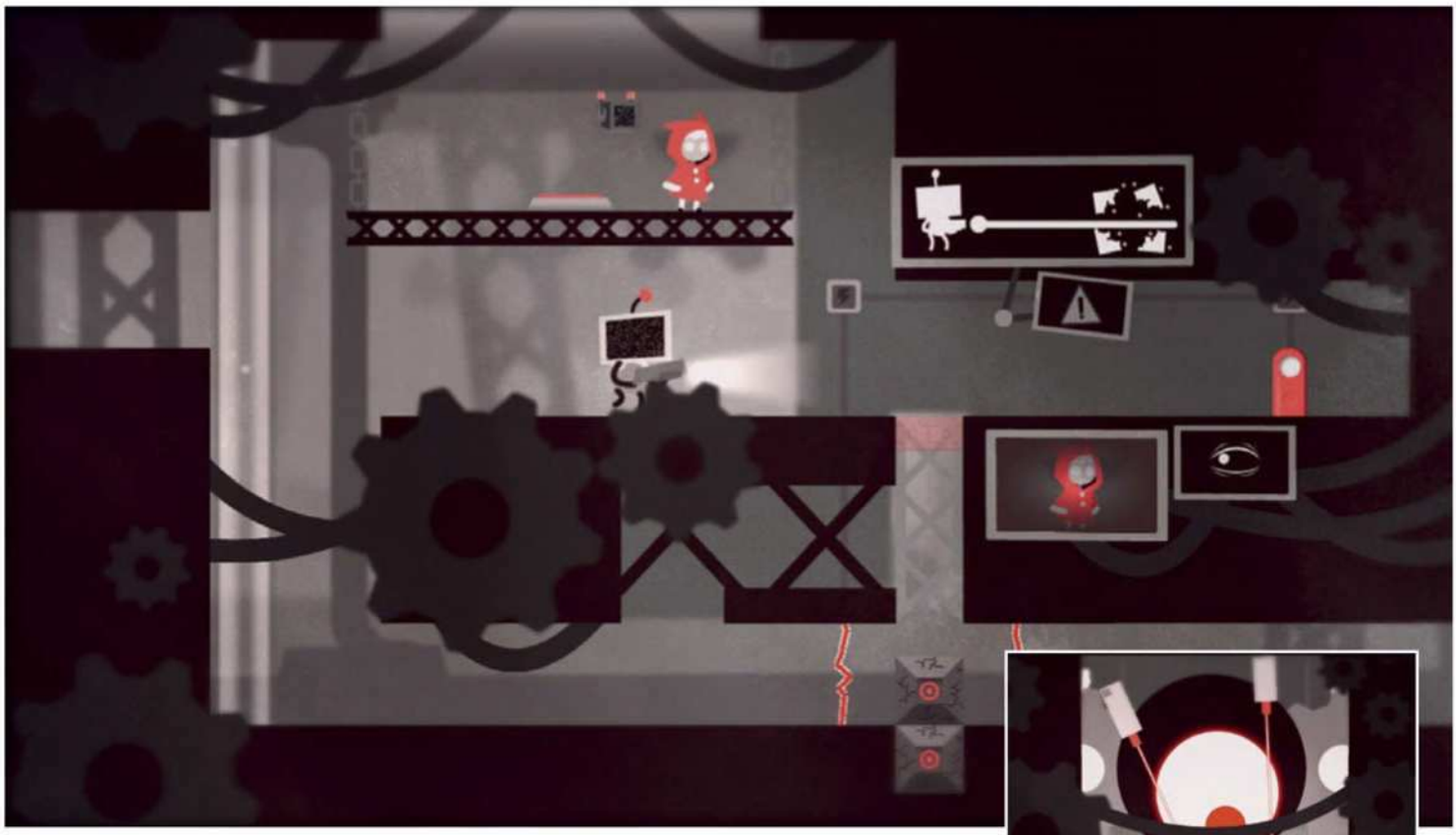
> "Linelight is a minimalist puzzler whose empty spaces prime the imagination"





A procession of simple moments doesn't sap your puzzling energy and I found myself playing for long periods, noticing details like how some of the lines pulse and move to the beat of the piano music. With chunky, suspended chords, it sounds somewhere between elevator and Billy Joel, contributing to the relaxed overall feel, adding percussion when danger is present. Probably, the complete lack of extraneous detail contributed to my engagement, too. There is nothing to distract you from the immediate goal, no superfluous elements at all.

My favourite moments in Linelight are when you're not alone, instead traveling with a malicious or neutral partner. They're helping you, but you're also both manipulating and helping them. I was pushing a pram, pulling a naughty dog, dodging unwanted attention, waiting for help and gliding around a shopping mall. There really is something about such minimalist presentation and progression that sets the mind to daydreaming. And wow, the ending. I'd recommend this even more strongly if you can commit to playing the entire game. It's certainly not a chore.



BOOR

DEVELOPER BADLAND INDIE
PRICE $5
badlandindie.com/boor

There's a telling, early moment in BOOR where you project a copy of your body and run it towards a patrolling TV-head robot, which then destroys both the projection and an obstacle in your way. As soon as the projection is gone, however, you're controlling your real self again and it is tremendously easy to run as if you are still the projection in a different location and fall into a place where the level is unwinnable, thus requiring suicide. Duh, Meghann? Stop running the instant the projection is gone? If it were so easy I wouldn't have failed literally twenty times.

Worse, this level then continues with circular saws on small platforms so, unless you're playing perfectly, you have to redo the aforementioned moment a bunch more times before you can have a second attempt at not being sliced in half. I find my enjoyment of twitchy puzzle platformers can very much depend on my state of mind when I play them. BOOR saw me oscillating wildly between, "What the hell were these level designers thinking?" and "This projection-based timing mechanic underpins the entire game and I must master it."

Probably, this game is not for the tired or easily frustrated. I'd say it was for lovers of speed and timing, but only if you can appreciate floaty jumps and quick manipulations of your right stick while you're rushing around. If the levels are sometimes annoying, the puzzles are good, especially as you start to combine larger areas and more complex elements, including switches, teleporters, guards, saws that follow you, lasers and, always, your projected self who is most cleverly used when she's expendable, or manipulating your real self as a ragdoll.

Why do you have a second self anyway? I'll at least tell you what is initially known about the setting. You're on Eden, a place where things have gone horribly wrong, as evidenced by the many skulls you will walk upon. You're not alone and the colony AI appears to have gone a bit mad. A host of security devices remain active and are hostile. You must escape. Sounds simple enough, but I quickly found myself quite connected to the characters and narrative, while scouring the art for more clues to context.

It also helps that story is usually delivered after difficult fights, because new people and insights function well as reward. Periodic bosses need to be tricked with your projected self and a stoic refusal to panic. There are certainly some incongruous moments during play, like how your projected self can teleport your real self to her, but only on special switches, but this does serve puzzling, nicely. More sensibly, your projected self can travel, ghostlike, through gray walls, which allows for a lot of variation in level structure.

RELEASED

Ultimately, the moment I described in the opening is only a weak precursor to more unwanted replaying of levels. Honestly, after attempting (maybe) half of the game, I decided to watch the story thanks to the determined efforts of a couple of YouTubers. When you're viewing a Let's Play, you can skip past all the understandable, repeated mistakes. Despite this, they seemed to be having fun. BOOR is fun. There's heaps of content, it's nice to look at and I wanted to know what happened in the story nearly enough to persist. Perhaps you are more skilled than I.

DEATH SQUARED

DEVELOPER SMG STUDIO
PRICE $25
deathsquared.com

RELEASED

At PAX Australia in 2015, I was thoroughly impressed by how two cubes, as well as some circles and spikes, so effortlessly made for an enjoyable co-operative experience. Freelance games reviewer, Jason Imms, and I shared ideas, laughed and failed, but always found solutions to puzzles, even if it took a short while. I've been looking forward to this game's release, and its final iteration is polished, meaty and fun to play with a friend. Surprisingly, some aspects of level design now detract from the experience, but I think I understand why.

When the game was at prototype stage, you could stare at each level and mostly glean how to solve it, occasional nasty surprises aside. It felt smart. Now, there are 80 two-player story levels with increasingly more pieces, lending them an illusion of incremental complexity, but this actually removes some of the player's ability to make clever decisions. My husband and I found that the first several levels felt smart, but we later had to trustingly navigate to the interactive pieces in turn, eventually solving many levels as if by accident.

This also exacerbates the "nasty" in "nasty surprises" to a feeling of proper unfairness when difficult-to-anticipate spikes, for example, suddenly stab you after a long journey through a not-rotatable isometric level. Oh, and it's somewhat too easy to accidentally drive your cube off an edge, even when it hasn't disappeared into an area you can't actually see. Bigger, and more pointlessly difficult, isn't always better, as I also appreciated with BOOR this month. Linelight nailed level design, simply by using game elements in more, not bigger, ways.

Having said this, there are two wry narrators, who remind me of the radio jockeys in Zombies, Run. They're framing the unfairness of their testing you into amusing contexts, threatening you with janitorial duties, even reminding you to move if you're idle for too long. You can play while they deliver story and I liked their banter a lot. Other nice touches include custom paint jobs for your cubes and funny moments like where they reverse your control scheme, then switch it back again because your many deaths signal that you can't handle it.

Party mode is for four cubes. Good luck with that. But, yes, it's supposed to be chaotic. It wouldn't be a party without everyone pushing each other off edges and yelling at each other, after all. As with all modes, you start to dread certain pieces, not in a bad way, just because you know things are going to get tricky. For me it was, "Oh no, lasers." And, this is an odd point, but "single player mode" which was one cube on each of your controller's sticks, hasn't made the final cut. Now you need two controllers and the will to play with both, as a lone player.

Probably the most useful endorsement I can give to Death Squared is that my non-gamer husband wanted to play it every night, in a way I haven't seen since his brief, but very fervent, infatuation with Mini Metro last year. I wanted the scope to be smaller and more thoughtfully crafted, but I also wanted to play it, so it did plenty right. I do have a bit of a love/frustration relationship with puzzle games, but it's more difficult to become annoyed when you have a friend sitting next to you who has to bear half of the responsibility for failure and success.

TAKUME

DEVELOPER TALECRAFTER
PRICE CHOOSE YOUR OWN PRICE
craftinglegends.itch.io/takume

You know what sucks about being a soon-to-be-40-year-old, short woman? Metabolism, and knowing you're going to have to give up that piece of cake with your daily coffee pretty soon. I've increasingly started to take my flat white, in its environmentally friendly and spill-proof sippy cup, with a small game instead of a sugary snack. Often, it will be a jam game or something 10 mins long and free. Always, I leave feeling inspired and definitely not thinking about cake. Takume, kind of a minimalist micro-adventure, was a suitable treat this month.

You'll probably understand the experience best if I take an inventory

RELEASED

of its elements. As well as beautifully crafted pixel art, there are a small handful of locations. A couple of characters tell you a few things about themselves or the context. There is one puzzle that really solves itself, a choice which isn't actually a choice, as these things go, and a betrayal. Questions are raised, there's a journey and definitely a lesson in there, too, even if I'm not absolutely sure what it was. But that's it, and it's enough for me.

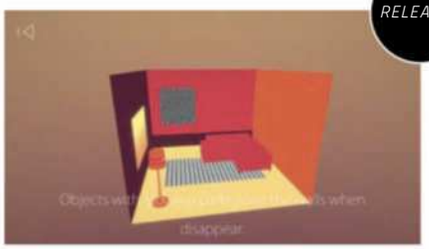
Will you find Takume satisfying? Well, I thoroughly enjoyed some evocative rain. I also googled the title and found that there is a depth to the story that is enriched by real world context. Most importantly, I didn't order a delicious looking eclair and I didn't even care, too busy having my thoughts provoked by a little slice of game experience. I generally play these "coffee break games" at home, but I look forward to setting a new hipsterish, microgaming, coffee shop trend with portable VR gear in my golden years.

EMPTY

DEVELOPER DUSTYROOM
PRICE CHOOSE YOUR OWN PRICE
dustyroom.itch.io/empty

Empty has become less a coffee break, more a lunchtime, game, given one of my composition students is using it to inspire the creation of a dynamic music system which is, frankly, excellent. I've been playing it regularly while he live mixes stems and we discuss process. It's a game you solve by rotating rooms to match colours of items with walls and other items, thus making them disappear. There are a few additional mechanics, like some items painting walls, and later levels get surprisingly intricate, but never impossible to solve.

I'm not sure I'd call myself truly "minimalist", like someone



RELEASED

who deliberately lives with 12 items of clothing, including shoes. Frugal, though, definitely. Making clutter disappear appeals to me. I mean, please, who still has a lamp in 2017? Poof, it's gone. Removing items in various orders, based on dependency, informs puzzle design, but I like thinking about what I'd choose to get rid of first, from these bright, modern rooms. That vase doesn't even have any flowers in it. Goodbye, superfluous coffee table.

Empty is a simple game which gets incrementally more complex in a way that works. It knows what it is, what it is not and doesn't feel like it's merely adding padding for the sake of it, ironically. There's certainly a message about simplicity to be had here, but it's also just a thoughtfully designed experience that I've enjoyed playing, while it inspires my student to compose. Definitely play this over lunch, then go back to work and throw everything out of your office. You'll feel better for it.

THE SURGE

Dark Souls in a mech suit set in a post-apocalyptic, sorry, near-future world? We definitely need to find out more...

DEVELOPER DECK 13 INTERACTIVE
PUBLISHER FOCUS HOME INTERACTIVE
DUE MAY
thesurge-game.com

"We were wondering if Donald Trump had been reading our design documents," laughs Jan Klose, managing director at Deck 13 Interactive and creative lead on the German studio's upcoming action-RPG The Surge.

I'm chatting with Klose via Skype having just played through a preview build of The Surge consisting of an early game area that introduces players to a dystopian Earth on the brink of environmental collapse. The level is an intricately designed industrial ruin full of half-destroyed machinery, crazed workers wearing mech suits, hostile drones, dust storms and toxic waste, and culminates in a boss fight against a giant robot that bears more than a passing resemblance to ED-209 from Robocop.

Klose is keen to stress that he doesn't consider The Surge to be post-apocalyptic. He constantly and very deliberately refers to its setting as "near-future." I get the feeling from talking to him that he's more interested in how society falls apart, and discovering if we can find a way to prevent it, than how we manage to cope and rebuild things after the fall.

The player-character, Warren, works for a technology corporation called CREO Industries. At the outset of the game, he's just another working grunt, labouring away; a tiny cog in the monolithic machine. The world hasn't been destroyed, Klose tells me, but climate change has made basic resources scarce and placed likely irreversible strain on the Earth's environment. A desperate coalition of world governments called on the private sector to pitch their solutions and CREO won the contract.

"Our basic idea was to look at the world today and paint a very grim picture of a near future," says Klose. "If we take a look at the news we see a lot of frightening things happening all around the world. What will happen if people don't get their act together and do something about [climate change]? Or what if we do act but we're too late?"

At this point I ask Klose what he thinks about developing his game to a backdrop of an American president pledging to pull out of the Paris Agreement on Climate Change, repealing environmental regulations left, right and centre, and signing executive orders that lease federal land to coal mining companies.

"Did [Trump's] secret service have access to [our design documents]? Because it reads and sounds very familiar to the the road we're

> "climate change has made basic resources scarce and placed irreversible strain on the Earth"

Cut off an enemy's limb and you're rewarded with a slo-mo finishing move.

predicting," says Klose. "We hope that when the game comes out in a couple of months that it doesn't feel like history but rather still a projection of what might or might not happen in the future."

Of course, The Surge is hardly a political game. Having played through the preview level I can nod in agreement with what Klose is saying, but he's not bellowing any kind of call for a global revolution. He doesn't want to beat you over the head with Ideology and Dogma; he's happy for his game to offer little connections to reality and nudge players to make the political links themselves.

"I don't see a reason why games should merely be escapism from reality," he says. "It's important to give your game's background and story a little bit of meaning and purpose. I think it's cool if you consider games a cultural product, if you pick up cultural references and also put in cultural statements.

"If you want you can see or read a lot in The Surge, however if you don't want to then hopefully it's just a nice action game and we don't bother you with it. But of course there's a lot that we think about, that we see that's going on, and there's a lot of that reflected in the game."

He's right, too. The Surge does seem, at least based on our short time with it, a nice action game, though we would append RPG to the genre categorisation. Warren is initially equipped with a handful of weapons and implants for his exo-suit. He ventures out from a hub through multi-pathed levels, fending off enemies with a few combo-able melee attacks, salvaging scrap and gear schematics, and unlocking shortcuts that circle back round to the hub where he can level up and upgrade his gear.

It's a nice action RPG that, and let's be honest here, is very, very, very heavily indebted to Dark Souls. To this writer, that's both a blessing and a curse. On one hand, you've got my interest immediately and I'm more likely than most to connect with the deliberate combat, not bounce

> "By the time you encounter the boss, you'll have unlocked five distinct paths heading out from the hub"

Workers popping out for a smoko with their near-future vapes. Tomorrow.

off the high degree of difficulty, and appreciate the satisfaction that comes from gradual mastery. On the other hand, any game that borrows from probably the best game of the last ten years is just setting itself up for failure in comparison.

With The Surge, Deck 13 is having its second go at making a Souls-inspired game. 2013's Lords of the Fallen was its first, a sort of heavy metal meets Warhammer spin on Souls, where manly men have manly beards, every hammer is as big as an anvil, and even your pauldrons wear pauldrons. It was a solid affair: the beefy, impactful core combat was only let down by samey enemies and straightforward level design, while the whole thing was carried along by an enjoyably goofy yet overly-serious to the point of parody storyline.

Lords of the Fallen was also Deck 13's first proper big budget title, having previously cut their teeth on much smaller point-and-click adventures and the 2009 action RPG Venetica. Klose says they learned an awful lot from that experience, his team has numerous structures and work flows they didn't have before, and they have been able to apply all that new knowledge to The Surge. He highlights three areas where he believes The Surge really improves on Lords of the Fallen.

"In the level design there were things we tried to do," he says. "Some of them worked really well but in the end [Lords of the Fallen] was pretty linear, even within one level there were not many ways to take or opportunities to experience things in a different way. So for The Surge we said let's make the level design far more intricate.

"We also wanted to let players experiment more and do more with their skills. And with enemy design, especially with our limb-targeting system where you can cut off parts and reuse them in one way or another, we also want players to experiment."

Looking at the preview build as evidence, I think it's fair to say that in terms of the level and enemy design the improvements are a success while perhaps the jury remains out on the possibilities for experimenting with skills.

The dilapidated factory at first feels tight and compact. Later, as you discover shortcuts and connections not immediately apparent, it reveals itself to be as sprawlingly labyrinthine as the best Souls locations (say, Lothric Castle in Dark Souls 3 or the Lost Bastille in Dark Souls 2). By the time you've encountered the boss of the area, you'll have unlocked five distinct paths heading out from the hub into the surrounds, all of which intertwine with at least one other path at various points deeper into the level.

At one point I found a lift leading down underground, but decided to leave it and keep exploring above ground. About an hour later, after entering some tunnels elsewhere and slowly working my way through a network of dark and twisty passages I stumbled upon the same lift, only this time from the opposite end leading back up to the surface. I'm not suggesting this is a revelation akin to taking the lift in Dark Souls down from Undead Parish and ending up back in Firelink Shrine where you began the journey some hours earlier, but it's a good indication that Klose and his team will deliver on their goal of more intricate level design.

Combat in The Surge adheres closely to the typical Souls experience of punishing players who show their impatience. Each encounter demands you manage your stamina, drained with each attack, dodge or block, learn to read enemy attack patterns, understand how to

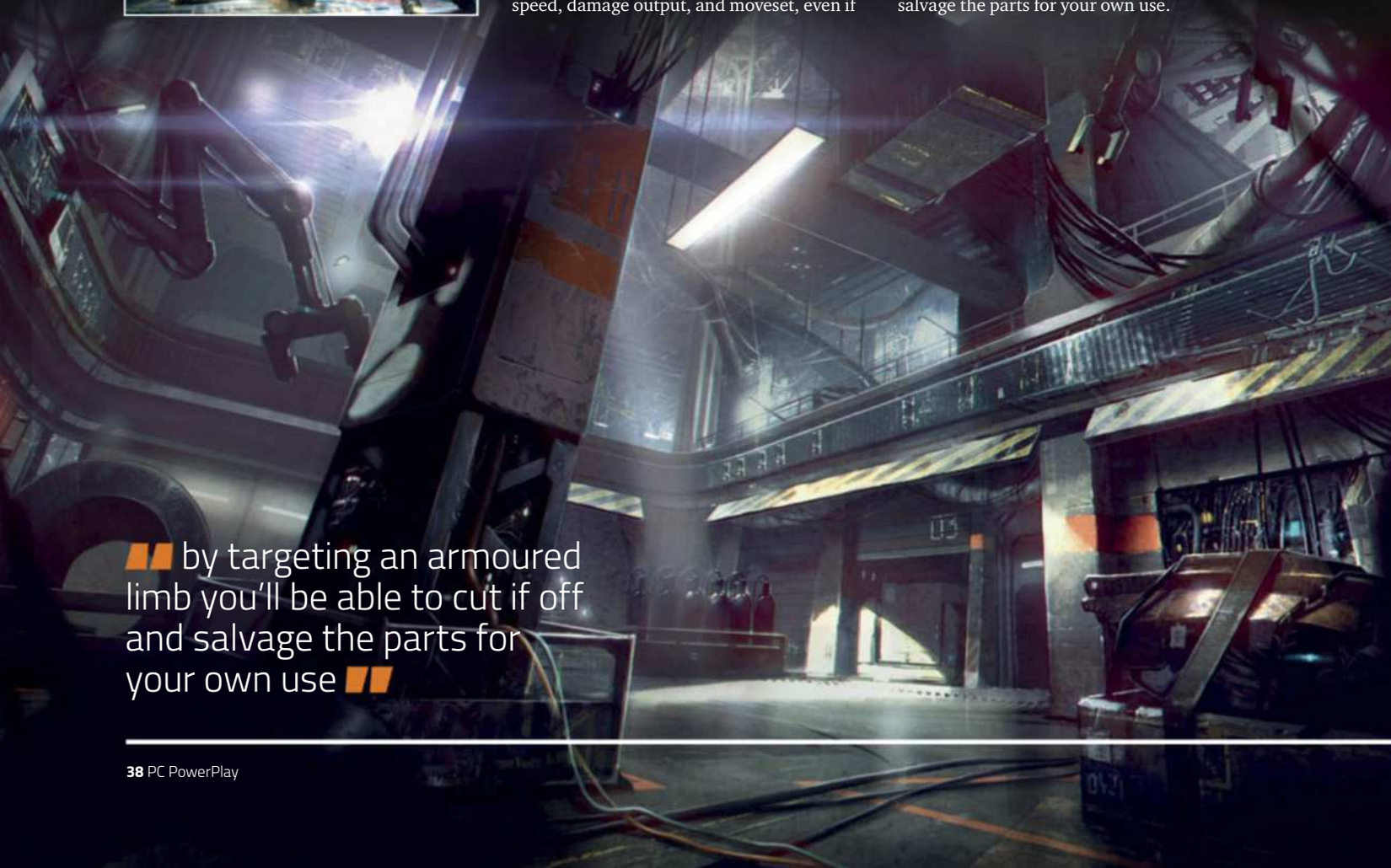
You've got to wear down large enemies by hitting their limbs until they're disabled.

position yourself both in and out of attacking range, and realise when you've bitten off more than you can chew. If you've played a Souls game, you'll know the basics. But there's a few unexpected tweaks to the formula.

Despite what you might expect from the near-future setting and the concept of a sci-fi Dark Souls, there are no guns or any kind of ranged weapon. Your weapons are mostly drawn from a selection of repurposed work tools: a metal pipe substitutes for a staff capable of crushing and thrusting attacks and an exo-suit saw attachment serves as a sword. The five weapons I used in the preview build varied enormously in terms of their attack speed, damage output, and moveset, even if they all in theory possess just one vertical and one horizontal attack.

Weapons can be upgraded, boosting their raw damage, as long as you have the requisite crafting materials. You also become more proficient with them through use, as in the recent Nioh; the higher the proficiency level, the higher the bonus damage it applies to each attack. Curiously, proficiency levels aren't applied equally across all weapons; some apply a higher scaling to the damage bonus than others. I increased my primary weapon's proficiency to level 8 by the end of the preview area and noticed a significant boost to its damage output. But there were other weapons I could have used that offered even more of a proficiency buff. I'll be very interested to see how these variations balance out in the final release.

The other notable addition The Surge brings to its combat is in the limb-targeting system Klose mentioned earlier. This kicks in when you lock on to an enemy and, if it has multiple limbs, allows you to flick the right analog stick (trust me, you're not playing this with mouse and keyboard) to target one of six specific areas: head, body, right arm, left arm, right leg and left leg. These limbs correspond to the six places where enemies (and you) can wear armour, so if an enemy's left his head exposed you can aim all your attacks there and do extra damage with each hit. The flip-side is by targeting an armoured limb you'll be able to cut off that right leg, for example, and salvage the parts for your own use.



"by targeting an armoured limb you'll be able to cut if off and salvage the parts for your own use"

The limb-targeting system has a nice element of risk and reward, and Klose is justifiably pleased with how it has turned out.

"We've got a good feeling about the limb targeting," he says. "We know it's the sort of thing that if you do it badly it can feel like a useless add-on to the combat or something that just makes it feel more difficult. We want players to use it in a variety of ways."

My experience was the first time I encountered an enemy I would target his unprotected limbs, if he had any, to make each fight easier and allow me to save my healing items. Later, when I was running through parts of the level I was familiar with, I'd focus on the armoured limbs in order to get those materials I'd need to craft my own armour upgrades. Farming becomes intentional, rather than relying on the RNG of item drop rates.

"If you want to have a full set of armour then you'll need to have targeted pieces from the six body parts on enemies to even get the blueprints," Klose explains. "Then to craft the item you need to obtain more parts from enemies of the same type. So you might say, 'For this run I need one head and two legs,' which sounds a little weird, but it's really a lot of fun when you go hunting for the materials you need from enemies that you now know how to defeat. They're still going to be tricky to defeat, since you're targeting their armoured limbs, but they are now basically prey for you."

All this crafting and upgrading is done back at the central hub of the level, which was a medical bay in the case of the preview build. Here's where you trade in your scrap (read: souls) earned from defeating enemies or found in out of the way places throughout the level. Level up and you increase your exo-suit's core power, which acts as both your level and a cap on the parts (armour) and implants (skills) you can attach to your suit. Each piece of armour costs power, as does each implant, with additional implant slots unlocked every five levels. Early on in the preview level I could only equip armour on my legs and fill three implant slots without exceeding my core power. By the time I defeated the boss, though, I had enough to fill five implants slots and wear a full set of armour.

Klose wants players to appreciate the flexibility of the implant system and to be forced to make hard choices over which ones to use.

"You can mix and match your skills depending on the situation you're in and that gives you a lot of freedom to think about how you want to approach the next location," he says.

"If there's an area with lots of environmental hazards you might want to take an implant that shields you from fire or poison or whatever, but you maybe need to drop a health implant that increases your maximum health. Or maybe you want to go for finishing moves or to get a good bonus from defeating an enemy, but these won't help you in a boss fight. So maybe you might need more healing or something that increases you stamina instead."

I probably didn't get to play with enough implants to get a feel for how tough these

choices will be. Aside from one early moment when I opted to go without the implant that lets you see enemy health bars in favour of one that gave me extra tutorial information, I never had too many implants that it felt like the decision were painful. I can say, however, that I was pleased to hear Klose say that the implants do get really specific; beyond the early game health increases there are plenty of later implants (such as one that provides a stamina boost after defeating an enemy or buffs a particular type of damage on a particular type of weapon) that allow players to fine tune and customise a distinct play style.

My time playing The Surge and chatting to the developer leaves me feeling confident that Klose and his team understand how to make an action RPG in a post Dark Souls world. I asked Klose why he personally likes the Dark Souls games so much and he said it's not just about the challenge but the feeling of a game "where you really need to advance bit by bit and need to take care about what is happening, what you're doing, how you're equipped." Which sounds like good advice for Donald Trump, too. *DAVID WILDGOOSE* PC

Our hero is definitely suffering from a severe case of weapon envy right now.

INTEL EXTREME MASTERS

KATOWICE, POLAND

It's one of the biggest eSports events on the planet, and it's like nothing else you've ever seen.

We've heard of the bleeding edge, but this is just silly.

ESL and Intel spend the year touring the world with Intel Extreme Masters events, but they culminate in three days of epic gaming and PC hardware in the city of Katowice, in southern Poland. Nestled amongst grim, leafless winter forests and the remains of abandoned coal mines, it's an odd place to find such an event, but there's no denying that this is one of THE biggest dates in the eSports calendar.

Imagine a location like the old Entertainment Centre, or the more modern venues around Sydney's Olympic Park, and now fill it with massive screens to replay all the action, and a truly adoring public. Get dozens of the best teams and players from around the gaming world, and pair it with a huge technology expo next door, where punters can get their hands on the latest PC tech and games. Run it over a weekend, with lines around the block each day, and you've got an idea of the event's scale.

There's also a lot happening behind the scenes, from special VR extravaganzas for visiting journalists, to training to areas for teams competing, and a lot of hobnobbing between hardware vendors. Possibly the odd night out after a long day of interviews and hitting the show floor. I couldn't possibly comment, but can recommend the Old Cuban Cocktail bar as a damn fine place for a drop if you ever find yourself in the heart of Katowice.

The virtual reality zone was a particular treat. Not only did I finally get to play Star Trek Bridge Crew (which set my phasers to stun, if you know what I mean), but there were some really neat setups for other VR games. There was a Virtuix Omni so you could run on the spot and exhaust yourself fleeing from zombies, the always-present racing rig – though this was a fully hydraulic one that looked like lots of fun, and probably the most unique VR setup I've ever seen: a sailboard mounted on a gimble, so that you could virtually hit the waves without getting your feet wet.

> "the most unique VR setup I've ever seen: a sailboard mounted on a gimble"

Hardly a practical, in-home solution, but a great way to show off virtual reality's capabilities.

The preliminaries and some sideline competitive events run all weekend, but it's not until the finals on the last day that things really start to go crazy. CS: Go and League of Legends were hotly fought, but it was the semis and finals for Starcraft 2 that caught my attention – two lonely gamers on stage, head to head, noise-cancelling earphones clamped over in-ear audio so they can hear the game, but not the audience or booming, sports-style commentary. The concentration on display was intense, as each player tried gambit after gambit – a rush to destroy the enemy economy here, a long-play toward late game tech there, and each able to switch tactics and strategy at a moment's notice.

I'd be either rage-quitting or in tears – these guys just calmly accepted each defeat, and went into the next match. All the while, the game's being played on huge displays on either side of the arena, the crowd cheering at each major conflict, at each clever stratagem. And with the introduction of each new player, roaring flames, major-chord rock music, and announcers yelling like they're at a UFC event.

The announcers are handy, though. Starcraft 2 is pretty fast-paced, but I'm so far off the boil with my Counter-Strike (in my youth, I played competitively, but that was a looong time ago) that I really needed someone yelling at me about what was going on. And I was even more at sea with LoL, because I am old and just don't get MOBAs.

But even so it's impossible to not get caught up in the action, and if all of this sounds like a heckin' good time, the Intel Extreme Masters is coming to Sydney in May! You can learn more about that even here – *en.intelextrememasters.com/season11/sydney* – and we recommend you give a go! *DAVID HOLLINGWORTH* PC

Get in some cardio while you flee from virtual reality zombies.

GAME OF THE YEAR 2016

STAR CITIZEN ALPHA 2.4.0 ■ I AM SETSUNA ■ ABZÛ ■ ARMA 3: APEX ■ NECROPOLIS ■ HEADLANDER ■ SHATTERED SKIES ■ INSIDE ■ STARBOUND ■ ZOMBIE NIGHT TERROR ■ FATED ■ DEUS EX: MANKIND DIVIDED ■ NO WARLOCK OF FIRETOP MOUNTAIN ■ REDOUT ■ CIVILIZATION VI ■ THUMPER ■ BATTLEFIELD 1 ■ EAGLE FLIGHT ■ MAFIA 3 ■ GEARS OF WAR 4 ■ ORWELL ■ SHADOW WARRIOR 2 ■ ARAGAMI DISHONORED 2 ■ MALLOW DRO DOGMA: DARK ARISEN ■ FAR CRY: PRIMAL ■ DYING LIGHT: THE FOLLOWING ■ STREET FIGHTER V ■ SUPERHOT ■ GRIM DAWN ■ FIREWATCH ■ LAYERS OF FEAR ■ THE FLAME IN THE FLOOD ■ DEATHSMILES ■ WE ARE THE AURION: LEGACY OF THE KORI-ODAN ■ CODE OF PRINCESS ■ THE BANNER SAGA 2 ■ HYPER LIGHT DRIFTER ■ OVERWATCH ■ TOTAL WAR: WARHAMMER ■ BATTLEBORN ■ DOOM ■ HOMEFRONT: THE REVOLUTION ■ STELL

X-COM 2 ■ HOMEWORLD: DESERTS OF KHARAK ■ RISE OF THE TOMB RAIDER ■ DARKEST DUNGEON ■ DRAGON'S DOGMA: DARK ARISEN ■ FAR CRY: PRIMAL ■ DYING LIGHT: THE FOLLOWING ■ STREET FIGHTER V ■ SUPERHOT ■ GRIM DAWN ■ FIREWATCH ■ LAYERS OF FEAR ■ THE FLAME IN THE FLOOD ■ DEATHSMILES ■ WE ARE THE DWARVES ■ THE DIVISION ■ GEARS OF WAR ■ HITMAN ■ DARK SOULS 3 ■ BATTLEFIELD GOTHIC: ARMADA ■ NEED FOR SPEED ■ QUANTUM BREAK ■ OFFWORLD TRADING COMPANY ■ 1979 REVOLUTION: BLACK FRIDAY ■ AURION: LEGACY OF THE KORI-ODAN ■ CODE OF PRINCESS ■ THE BANNER SAGA 2 ■ HYPER LIGHT DRIFTER ■ OVERWATCH ■ TOTAL WAR: WARHAMMER ■ BATTLEBORN ■ DOOM ■ HOMEFRONT: THE REVOLUTION ■ STELLARIS ■ GOLIATH ■ DRI AND THE BLIND FOREST ■ KILLER INSTINCT ■ AUDIOSHIELD ■ THE TECHNOMANCER ■ MIRROR'S EDGE: CATALYST ■ EVE VALKYRIE ■ ELITE DANGEROUS VR ■ ONECHANBARA Z2 CHAOS ■ THE SOLUS PROJECT ■ ANIMA: GATE OF MEMORIES ■ FURI ■

AUSTRALIA'S #1 PC GAMING MAG

PC PowerPlay

READER'S GAME OF THE YEAR 2016

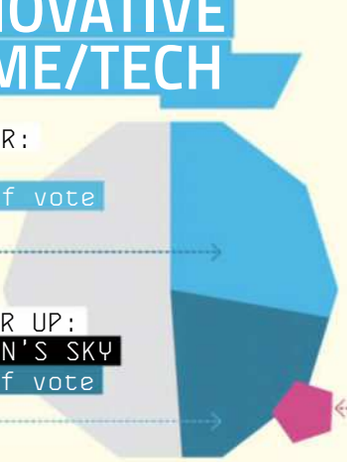
POWERED BY

RAZER

THE VOTES ARE IN AND YOU'VE HAD YOUR SAY. WHO WINS GAME OF THE YEAR FOR 2016? READ ON TO FIND OUT!

Congratulations to the winners of our Reader's Game of the Year prize! We'll publish the names and the Razer prize pack details in issue 262.

MOST INNOVATIVE GAME/TECH



ODD OUTLIER:

Pokemon GO: Despite it not being a PC game, Pokemon GO still managed to garner 16% of the vote overall

> THE $8 DESKTOP TARGET FAN

I bought as my office doesn't get the aircon love and a louder fan interferes with my mic. **BEN FARLEY**

> VIRTUAL REALITY

I'm not going to specify a platform, but I am going to say that the innovative steps released in 2016 are the foundation of the future. **DAVID FREW**

> NO MAN'S SKY

The scope of this game is just astounding. Even its many critics admit that it is a mile wide; the criticisms are about lack of depth. I think it will be as influential as Doom, whether or not it is ultimately a success itself. **PATRICK GRACE**

> BATTLEFIELD 1

Showing even old wars can make good games. **WARREN SKEEN**

> MASTER OF ORION

I didn't think games cared about exploring strategy in space anymore! **DANA LANGHAM**

> PROJECT VALERIE BY RAZER

Having 3 screens in a portable format means programmers will not locked to a desktop anymore! **PETER VLEESKENS**

BEST SHOOTER

> DOOM

So underrated upon release. Game is absolutely exhilarating. **BEN FARLEY**

> TITANFALL 2

Because nothing else has the same fluidity and speed of combat" **ZISENG CHEN**

> OVERWATCH

For being the game for everybody. **DAVID FREW**

> DOOM

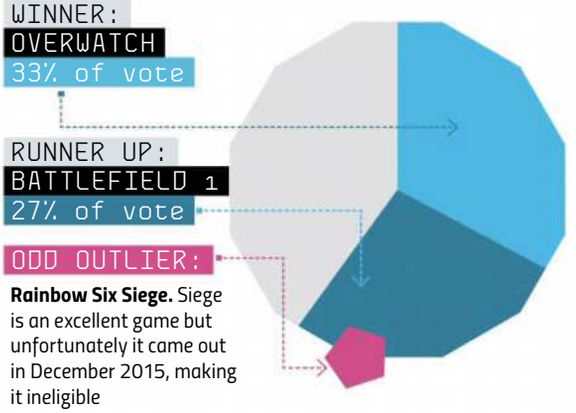
Visceral was always such a dirty word, not anymore. **MATTHEW SCHMIDT**

> DOOM

A great game with fantastic graphics, have been waiting a long time to revisit the series. **TOBIAS BUSUTTIL**

> DOOM

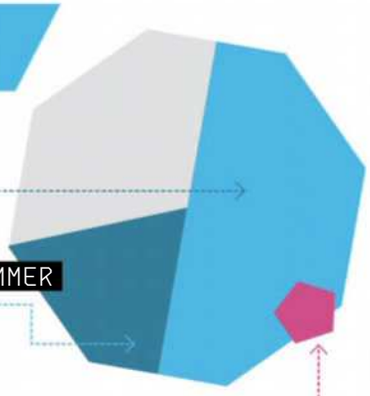
DIE DEMONSSS!!!! **SABYAN HARDIO**



Rainbow Six Siege. Siege is an excellent game but unfortunately it came out in December 2015, making it ineligible

RAZER
DEATHADDER ELITE
The world's most advanced optical sensor
Gaming-optimized Razer™ Mechanical Mouse Switches
Gaming ergonomics perfected for esports athletes

BEST STRATEGY GAME



> XCOM 2

Except F*** this game due to them constantly spawning aliens just as I'm turn away from escaping with 2 cripples left... **BEN FARLEY**

Halo Wars 2: A Feb 21, 2017 release is a little too late for a 2016 game

> TOTAL WAR: WARHAMMER

Because it married the tabletop game with a video game so well. **ZISENG CHEN**

> STELLARIS

So complex it makes my brain hurt, so big it takes forever to finish, so engrossing I keep going back for more. **DAVID FREW**

> CIVILIZATION 6

There are few games that challenge the Civ franchise for the crown of top PC strategy game, and none of them came out last year. **PATRICK GRACE**

> STELLARIS

It's gotten better (even without mods) countless hours lost in a distanced 4x that makes you feel more a part of your empire than a god. **MATTHEW SCHMIDT**

> OFFWORLD TRADING COMPANY

Because colonising Mars is a worthy concept, and about time we get away from violence and head towards thought. Pure strategy. **DANA LANGHAM**

> TOTAL WAR: WARHAMMER

Classic Total war breaking the bounds of boring actual history to fantasy. **SABYAN HARDJO**

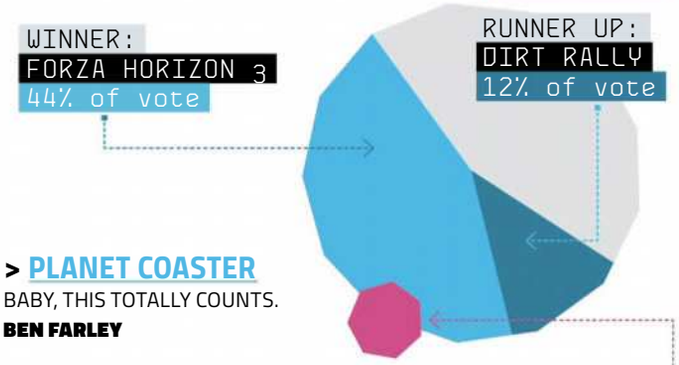
> CIVILIZATION VI

The Civilization series is some of the best strategy games of all time. They keep on improving. **DAVID TURNBULL**

CIVILIZATION VI

FORZA HORIZON 3

BEST RACING/ DRIVING GAME



> PLANET COASTER

BABY, THIS TOTALLY COUNTS. **BEN FARLEY**

> DIRT RALLY

Because sometimes (let's be honest, most of the time) getting dirty is a good thing. **DAVID FREW**

> TRACKMANIA TURBO

Always loved this franchise, and this instalment doesn't disappoint! Trackmania goodness/ hilarity! **DANA LANGHAM**

> FORZA HORIZON 3

Awesome to have a game like Forza set in Australia and come to PC. Fantastic cars and landscape, a clear winner. **TOBIAS BUSUTTIL**

> FORZA HORIZON 3

Because crashing into trains is fun. **SABYAN HARDJO**

Super Mario Run. A fairly average mobile phone autorunner does not a racing or driving game make.

> FORZA HORIZON 3

Hands down the best arcade racer I have played. Set in my home country Australia. Some iconic Aussie cars included for good measure. Great game. **DAVID TURNBULL**

> PROJECT C.A.R.S

It took a while to get released but was worth the wait. Most realistic graphics and game physics in any racing game. **PETER VLEESKENS**

> Because sometimes (let's be honest, most of the time) getting dirty is a good thing

BEST RPG/ ADVENTURE

WINNER:
DARK SOULS 3
23% of vote

RUNNER UP:
THE WITCHER 3: BLOOD AND WINE
15% of vote

> THE WITCHER 3 BLOOD AND WINE EXPANSION

Because it provided substantial content to satisfy the need to play more Witcher 3. **ZISENG CHEN**

ODD OUTLIER:

Uncharted 4. Not a PC game. Also not an RPG or Adventure game. Aside from that, no prolems.

> DARK SOULS III

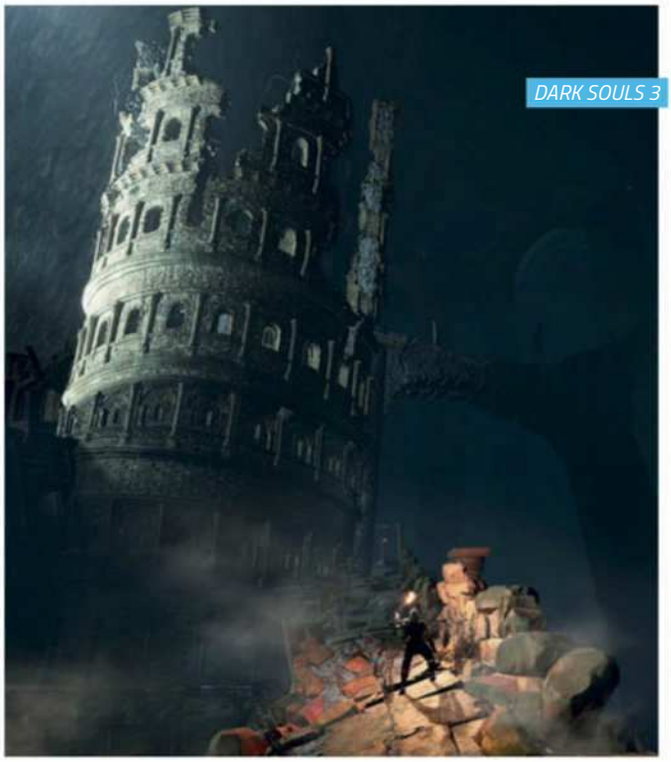
YOU DIED. **DAVID FREW**

> TYRANNY

It's just so pretty O_O and to approach the whole thing from evil's perspective is very unusual! **DANA LANGHAM**

> STARDEW VALLEY

Absolutely love this game. If this doesn't count, then Dark Souls 3, fantastic and brutal as Dark Souls should be. **TOBIAS BUSUTTIL**


DARK SOULS 3

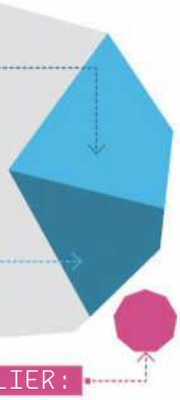
RISE OF THE TOMB RAIDER

SUPERHOT

BEST ACTION GAME

WINNER:
RISE OF THE TOMB RAIDER
19% of vote

RUNNER UP:
SUPERHOT
13% of vote



> HYPER LIGHT DRIFTER

I also want to vote for Planet Coaster, those janitors won't hire themselves! Actually I action to vote for Planet Coaster. **BEN FARLEY**

> SUPERHOT

Don't judge me. **DAVID FREW**

> TOMB RAIDER

Lara Croft & Tombs - what else can you ask for! **CASSIE EDMAN**

> RISE OF THE TOMB RAIDER

It's Tomb Raider - it's probably going to win by default with their reboot efforts so good right now. **MATTHEW SCHMIDT**

ODD OUTLIER:

Outlier two header! Uncharted 4 and Ratchet & Clank. The genre is right but the platform is way off.

> MAFIA 3

I know opinions are divided on this one, but I thought it was great. From the setting to the vehicles and gunplay I had a lot of fun. **TOBIAS BUSUTTIL**

> SUPERHOT

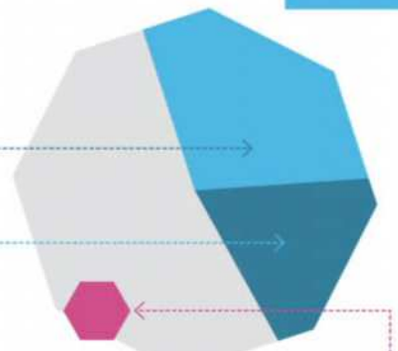
Really cool idea. **SABYAN HARDJO**

RAZER
KRAKEN PRO V2
50 mm audio drivers custom tuned
Unibody aluminum frame
Designed for maximum comfort / zero fatigue
SKT-T1 | Faker
League of Legends, Three-time Worlds champion

BEST GAMEPLAY

WINNER:
OVERWATCH
29% of vote

RUNNER UP:
TITANFALL 2
18% OF VOTE



ODD OUTLIER:

Cricket Captain 2016. A decent cricket game? We didn't even know this was a thing. This is our failing, not that of the voter.

> DISHONORED 2

Story is a let down but Arkane can design some crazy levels and even crazier gameplay mechanics. **BEN FARLEY**

> OVERWATCH

Addictive, engaging, welcoming, friendly, fun. **DAVID FREW**

> THE WITNESS

No words but none needed. More Jonathan Blow brilliance. **CASSIE EDMAN**

> BATTLEFIELD 1

So much fun. **WARREN SKEEN**

> TITANFALL 2

The different elements you encounter through the campaign are just a joy to engage with. **MATTHEW SCHMIDT**

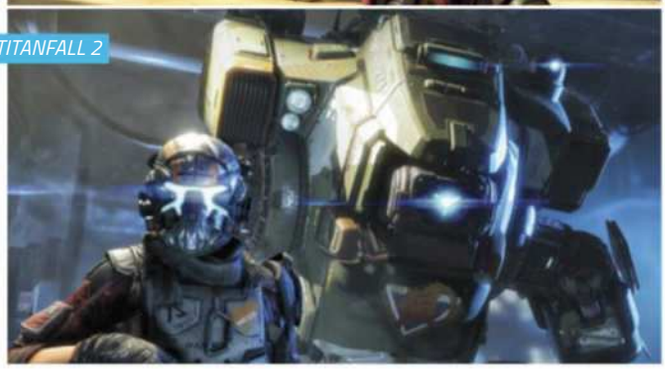
> PLANET COASTER

I have been waiting for a game that improves on the old Rollercoaster Tycoon, and avoided the disappointment that was RCTW. Awesome game. **TOBIAS BUSUTTIL**

> OVERWATCH

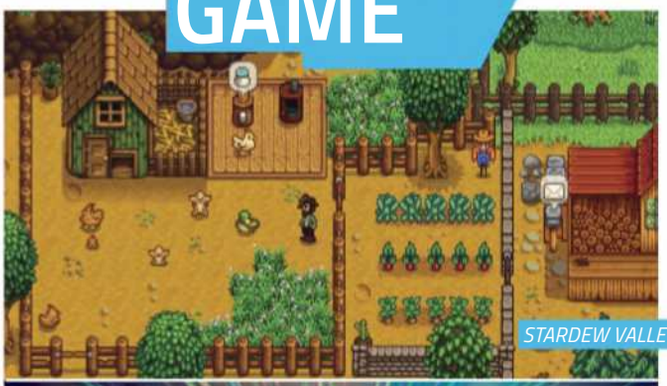
Just so well balanced. **SABYAN HARDJO**

OVERWATCH



TITANFALL 2

BEST INDIE GAME

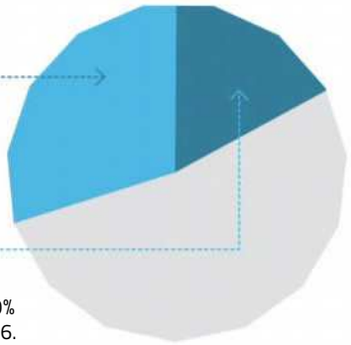


STARDEW VALLEY

NO MAN'S SKY

WINNER:
STARDEW VALLEY
30% of vote

RUNNER UP:
NO MAN'S SKY
17% of vote



ODD OUTLIER:

None. Of all the categories, Indies was the only one that featured 100% votes for PC games released in 2016.

> HYPER LIGHT DRIFTER

Game is cool AF. **BEN FARLEY**

> STARDEW VALLEY

It's something I never would have considered playing until I tried it and loved it. **ZISENG CHEN**

> STARDEW VALLEY

Who would have thought perfection would be this 2D? **DAVID FREW**

> THE CURIOUS EXPEDITION

Totally unexpected brilliance. **CASSIE EDMAN**

> NO MAN'S SKY

If it can count - I love it. Fight me. **MATTHEW SCHMIDT**

> STARDEW VALLEY

Fantastic game. So much to do and I had a lot of fun with it. Haven't played anything quite like it before. **TOBIAS BUSUTTI**

> FIREWATCH

Awesome story. **SABYAN HARDJO**

> INSIDE

A little short but an amazing game. I finsihed it in one sitting because it was a gripping tale. **DAVID TURNBULL**

DESIGNED FOR ESPORTS

RAZER RAIJU GAMING CONTROLLER

PS4

Four additional fully-programmable buttons | Ergonomic shape and weight | Quick Control Panel

BEST STORYTELLING

> EMILY IS AWAY
The 30 minute rejection simulator. PLAY THIS GAME AND RELIVE YOUR TEENAGE YEARS. IT'S FREE JUST LIKE YOUR WEEKENDS.
BEN FARLEY

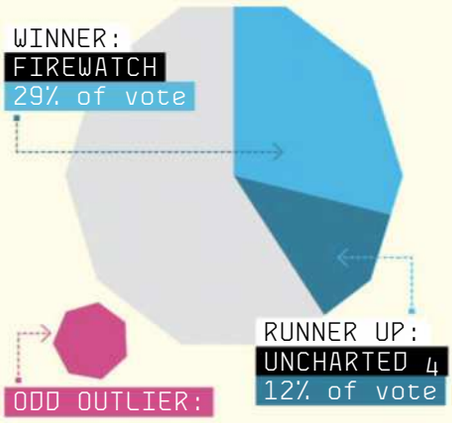
> FIREWATCH
though I don't enjoy it as a game (possibly something wrong with me I admit), but I felt the story spoke to me. **DAVID FREW**

> FIREWATCH
Fantastic writing keeps you engrossed.
CASSIE EDMAN

> DEUS EX - MANKIND DIVIDED
While it's always been good story telling - Mankind pushed it forward in an engaging way.
MATTHEW SCHMIDT

> FIREWATCH
An emotional rollercoaster, great to finally see more games with storylines aimed at adults. I am yet to finish this one and the critics of the ending have kinda put me off wanting to finish the story I have enjoyed so much.
TOBIAS BUSUTTIL

> FIREWATCH
Intriguing and captivating. **SABYAN HARDJO**



Uncharted 4: Seems it actually got the second most votes in the category it's technically not an outlier, but come on. PS4 is not PC.

BEST GRAPHICS

> DOOM
I know all my Steam friends who don't look at their activity feed appreciated my shots of hell. **BEN FARLEY**

> BATTLEFIELD 1
Because it's just so beautiful. **ZISENG CHEN**

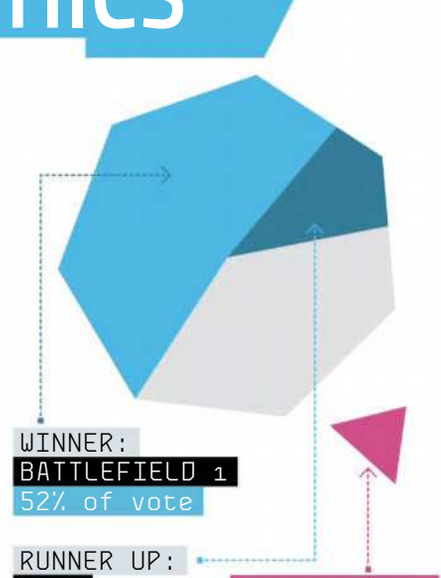
> BATTLEFIELD 1
I don't love it, but it is very pretty (and punishing on your graphics card). **DAVID FREW**

> BATTLEFIELD 1
Sometimes - when the light filters through - it's just magic. **MATTHEW SCHMIDT**

> MIRROR'S EDGE CATALYST
Simply stunning, the attention to detail is full-on, but I can't even run it, only seen vids, so what am I saying?! Lol. **DANA LANGHAM**

> PROJECT CARS
Graphics good enough that some screenshots taken a second and third look to be sure they are a game and not a photo. Stunning. **TOBIAS BUSUTTIL**

> BATTLEFIELD 1
Making a drab war really pop!
SABYAN HARDJO



The Witcher 3: Fantastic looking game, but it came out in 2015.

"I can't even run it, only seen vids, so what am I saying? Lol."

BRED TO FIGHT

RAZER PANTHERA

PS4

Premium quality Sanwa hardware components | Fully mod-capable construction | Internal storage compartments

BEST SOUND

> BATTLEFIELD 1

Because the sounds of war are captured so well to recreate the wide variety of scenarios in the single player campaigns. **ZISENG CHEN**

> HYPER LIGHT DRIFTER or THUMPER

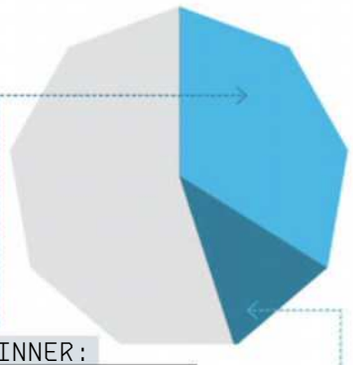
Journey? It's not PC and it's not 2016 but I feel it's the right answer. Otherwise I'll probably go with Hyper Light Drifter or Thumper.
DAVID FREW

> BATTLEFRONT 1

Sometimes - when the ping of bullets lace an explosion - it's just magic.
MATTHEW SCHMIDT

> DOOM

I thought the soundtrack was great and the creature and weapon sounds are awesome. **TOBIAS BUSUTTIL**



WINNER:
BATTLEFIELD 1
34% of vote

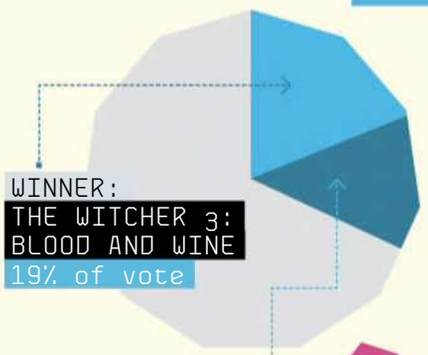
RUNNER UP:
DOOM
11% of vote

ODD OUTLIER:
Final Fantasy XV: The game has an awesome score and some great voice work, but it's only on consoles.

BATTLEFIELD 1

DOOM

BEST VOICE/MOCAP PERFORMANCE



WINNER:
THE WITCHER 3:
BLOOD AND WINE
19% of vote

RUNNER UP:
MAFIA 3
13% of vote

ODD OUTLIER:
If you guessed Uncharted 4, you win a prize!*
*PRIZE DOES NOT ACTUALLY EXIST

> PLANET COASTER

My introductions to my guests to my various theme parks in the realm of Planet Coaster. And my Mrs thinks I'm on skype.... **BEN FARLEY**

> OVERWATCH

24 voices that I hear more often than my own (which could be a bad thing). **DAVID FREW**

> TITANFALL 2

Can I say BT in Titanfall 2? How to be a robot without feeling with so much feeling. **MATTHEW SCHMIDT**

> MAFIA 3

I really enjoyed the voice work, it was engaging and made everything fit together. I think the actor chosen for Lincoln fit the role perfectly. **TONIAS BUSUTTIL**

> BATTLEFIELD 1

Go Australian Accents! **SABYAN HARDJO**

> QUEEN VICTORIA IN CIV 6

I love declaring war on her so I can hear her say "We are NOT amused!" **PATRICK GRACE**

CIV VI

WIRELESS FREEDOM.
GAMING FIDELITY.

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MANO'WAR

Latency-free wireless performance audio
Wireless 7.1 virtual surround sound
7 days of wireless gaming on a single charge

POWERED BY RAZER CHROMA

BEST SINGLEPLAYER

> DOOM or DARK SOULS III
I'm probably leaning towards Dark Souls III though. **DAVID FREW**

> THE WITNESS
No words but none needed. More Jonatan Blow brilliance. **CASSIE EDMAN**

> NO MAN'S SKY
Not for everyone, but what game is? CriticiSed as pointless, but what game isn't? For me, the exploration stage is the most fun part of games like Civ and MOO2. NMS at launch did not do much else but it does exploration better than any game ever. **PATRICK GRACE**

> BATTLEFIELD 1
Epic single player. **WARREN SKEEN**

> TITANFALL 2
I can't remember enjoying a SP shooter campaign as much as this. It was fast food gaming sure, but man was it delicious. **MATTHER SCHMIDT**

DOOM

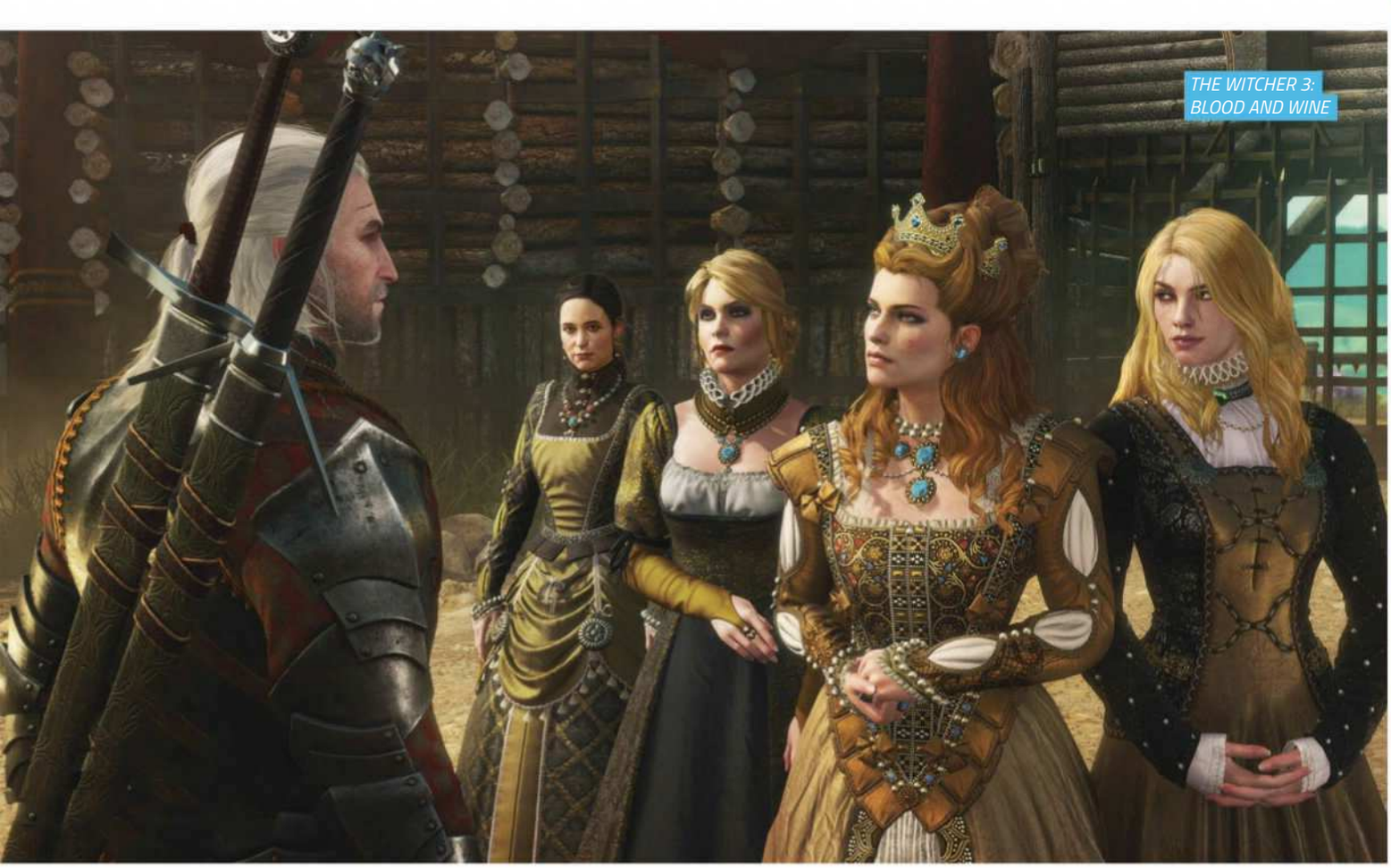
> DOOM
I think Doom wins this one too, I really, really enjoyed it. I'm not a big fan of playing games on my own, but Doom managed to keep my interest. **TOBIAS BUSUTTIL**

> BATTLEFIELD 1
because I knew nothing about WW1. **SABYAN HARDJO**

WINNER:
THE WITCHER 3: BLOOD AND WINE
20% of vote

RUNNER UP:
DOOM
17% of vote

ODD OUTLIER:
Battlefield 1: Sure, the single player campaign was good, but best singleplayer experience of the year?


THE WITCHER 3: BLOOD AND WINE

BEST MULTIPLAYER

I didn't get into Overwatch so The Division for the ten hours I played it with 2 other mates. Wait can I vote for the best game of all time in Rocket League? I'm still playing it. That totally counts. **BEN FARLEY**

> TITANFALL 2

No other game has kept me coming back like this one and because Overwatch will probably win but I don't like Overwatch" **ZISENG CHEN**

> OVERWATCH

(Are we seeing a theme here?) **DAVID FREW**

> BATTLEFIELD 1

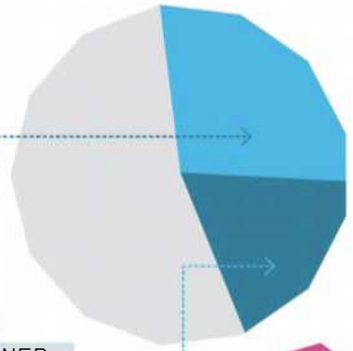
Huge fun. **WARREN SKEEN**

> CIVILISATION VI

Getting to either team up with you mates or annihilate them in many different ways is great. Nothing like a mid-game betrayal to get tempers, and banter blazing followed by laughs when it inevitably backfires. **TOBIAS BUSUTTIL**

> TITANFALL 2

It had a really good single player campaign. Sadface for the robot. **SABYAN HARDJO**



WINNER:
OVERWATCH
28% of vote

RUNNER UP:
TITANFALL 2
18% of vote

ODD OUTLIER:

World of Warcraft: Legion: Not because it's an odd choice, but because only one person voted for an MMO out of all the votes we received. That's definitely odd.

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Tactile and Clicky

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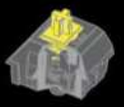

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The virtual currency and rewards system for gamers

OVERALL READER'S GAME OF THE YEAR 2016

> DOOM
I love coasters and my fake ex-girlfriend Emily but it's Doom. Play it now. Play it again. It is PC gaming. DOOM!
BEN FARLEY

> CIV 6
Love the new graphics & the districts.
CASSIE EDMAN

> NO MAN'S SKY
I have never seen a game attract such dedicated haters - months after it came out, people are still posting bile-filled rants about how bad it is. For dominating the lives of even lots of people who don't play it - Game of the year. **PATRICK GRACE**

> DEUS EX MANKIND DIVIDED
Hard year - lots of great games came out. I'd have to go with Deus Ex - long after I'd finished my third playthrough I was still thinking about the world, where it was heading, where it come from. I really enjoyed it from start to finish.
MATTHEW SCHMIDT

> DOOM
"For me, I think I really have to choose Doom. I really enjoyed it and have picked it for a few best of categories. It's the standout winner for me."
TOBIAS BUSUTTIL

> BATTLEFIELD 1
Just good overall"
SABYAN HARDJO

> DOOM
An old-school shooter for an old-school PC game fan in his late 40's! Hope my eyesight will keep up for a few more years of gaming!
DALE STOHR

> DOOM
Updating an iconic franchise for a modern audience whilst reintroducing elements of what made the originals so great that are missing in a lot of today's titles.
JASON KING

FIFTH PLACE
NO MAN'S SKY
5% of vote

FOURTH PLACE
THE WITCHER 3: BLOOD AND WINE
9% of vote

THIRD PLACE
CIVILIZATION VI
10% of vote

EQUAL SECOND PLACE
DOOM AND BATTLEFIELD 1
14% of vote each

RAZER PRESENTS
The virtual currency and rewards system for gamers

WINNER
> OVERWATCH

19% of vote

ODD OUTLIER

Take a wild guess. It's a PS4 game that rhymes with "bum-sharted gore".

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Games 261

YOUR GUIDE TO PC GAMES

When is big too big?

Size ain't everything

Games are getting bigger in almost every way, especially in the AAA space. Bigger dev teams (at least during production), bigger budgets, bigger marketing spends, and - of course - bigger products. It wasn't that long ago that games larger than 10GB were rare on the ground.

Now they're kinda cute and tiny and retro.

Two of this month's games were positively huge, but I'm no sure they're any better for it. Both Mass Effect Andromeda and Ghost Recon Wildlands push enormous worlds to explore, though Andromeda spreads its action out over multiple worlds, with distanct locales.

But you're still doing the same things on each of them. In Wildlands, it's a single, giant, open world, but it merely means you spend a lot of time sliding around on mountain-side roads or trying to control helicopters before they crash into said mountainsides.

As Daniel observes in our Mass Effect conversational, it's a matter of scale over scope.

The problem with opening worlds wider and wider is that you end up needing more things to fill them with, and then you end up just putting in filler quests - Andromeda doesn't even seem to be hiding the fact that it's giving you busy work, when one of the galaxy-spanning quests is called Hitting Rocks for Science...

David Hollingworth
Digital Editor

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68 Ghost Recon: Wildlands
69 Loot Rascals
70 Vikings: Wolves of Midgard

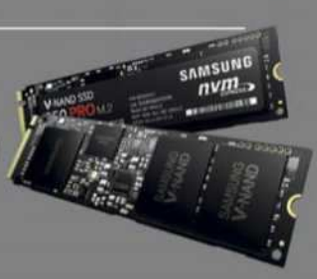
POWERED BY
REPUBLIC OF GAMERS

SCORING SYSTEM | PCPP scores its games on a 1 to 10 scale. The higher, the better – though 10 is by no means a "perfect" game. We're not convinced such a thing exists, so consider a 10 a masterpiece of PC gaming, despite its inevitable flaws. A 5 is a decidedly average game; one that doesn't excel in any particular area, without being an affront to our senses – the ultimate in mediocrity. Below this, you'll start to find the games our reviewers suffered an aneurysm getting through; above it, the titles truly worth your time and money. And remember: a score is only a vague indication of quality. Always read the full review for the definitive opinion!

WE PLAY ON:

ALIENWARE
GAME VICTORIOUS

SAMSUNG
950 PRO



Mass Effect: Andromeda

Everyone has already made the Mess Effect joke

DEVELOPER BIOWARE
PUBLISHER EA
PRICE $89.99
AVAILABLE AT ORIGIN, RETAIL
masseffect.com/Andromeda

WILKS: I was a massive fan of the first Mass Effect arc. I loved them all, including the deeply divisive third game (the whole game was the ending, not just the space kid), so the idea of a new arc starting had great appeal for me. I love the premise - concurrent to the Reaper threat in the Milky Way, a number of arc ships carrying tens of thousands of colonists, scientists and explorers pulled from the ranks of all the Council races sets off on a 600+ year journey to the Andromeda galaxy with the aim of colonising the "golden planets" discovered in the Heleus sector.

It's a great break from the events of the first game without having to ignore anything that went before. There are no Mass Effect relays required for travel, no existential Reaper threats and no enshrined bureaucracy to negotiate, but the memories of those things (with the exception of the Reapers) still influence character reactions and events. It's a great idea and there are definitely some great moments, but ultimately I think Andromeda is a victim of the developer's ambition, as those ambitions seem to have been focussed in the wrong direction. There are a large number of open world planets to explore and a huge system to chart, but the scale of the game isn't necessarily matched by the scope. There are more places for players to do their thing, but there are only a limited number of things to do.

HOLLINGWORTH: Yeah, I really can't argue with that assessment.

I was - and still am - a big fan of the series, and while I was disappointed in the ending of the ME3, overall Mass Effect is one of the greatest RPGs ever made. I don't think I've ever invested so much in a roleplaying game.

And, from where Mass Effect Andromeda is standing, I can see a similar greatness. It looks fantastic, it has the deepest systems and mechanics of the entire series, and is absolutely huge. It has a cast of rich characters, with some easily on a par with the standouts from the original - Vectra, we're looking at you, and PeeBee is definitely my SpaceBae.

But, while it is really, genuinely thrilling to get a new planet viable enough to start a new colony, and then watch it get set up, it does kinda get… not boring, but less special over time. Sure, there's a plot linking everything together, but the stakes feel a lot lower than in previous games. There's just too much to do, which is an odd thing to criticise, but it really does make the game's actual plot feel threadbare.

> "ultimately I think Andromeda is a victim of the developer's ambition"

WILKS: No, I think you're right about there being too much to do. It's not that there's an overwhelming amount of content, but that the content is repetitive and a lot of it amounts to little more than busy work. There's a lot to do mechanically as well, but ME: A is absolutely terrible at explaining how things work. It all goes back to this sense of scale rather than scope. Bringing one planet to 100% viability is thrilling and a real sense of achievement, but instead of changing up the gameplay or progressing the story in an interesting new

direction, after settling your first Heleus planet you then get to do it again. And again. And again. And again.

Not everything is fixing planets for human colonisation. There are some great diversions to these elements and to me that's where ME: A comes into its own. In the backstory - and this isn't a spoiler - only the Human arc arrives at the correct coordinates in Andromeda. The other arcs are missing. One of the ongoing concerns is discovering and hopefully rescuing the missing arcs. These missions feel more like the Mass Effect of old. They are big stories with far ranging consequences but they are played out on a very personal level, with one or two key characters being pivotal to events and player actions having lasting moral implications.

The personal feel of the previous Mass Effect games is what made them so resonant with me, and while tooling around a vast open world in the Nomad is fun, the open nature of exploration and questing makes things feel kind of impersonal.

HOLLINGWORTH: Yeah, with so much to do I feel like Bioware might have missed an opportunity to so some interesting things with the way you take on quests. After all, in the Strike Team missions - where you can send squads off to do your bidding on a range of missions for limited rewards - the missions are timed. If you don't get to them in a certain timeframe, they refresh. That would have done a lot to lend the game a sense of place, of needing to make hard decisions, and letting those decisions have real consequences.

As it is, the game is all DO THIS THING IN A HURRY, and then you get all the time in the world to do that thing. Which is pretty standard for RPGs, but after ME3's real sense of urgency, Andromeda feels like a step backward.

Now, I must admit, despite this, I'm still enjoying a lot of game. Combat is more fluid than ever before, and the range of weapons and gear makes inventory management challenging, but worthwhile. Your companions are worth getting to know, and just exploring your ship - the Tempest - is a lot more fun, thanks to an easier to traverse layout. And there are some truly jaw-dropping moments of action, and intense moments of story development.

It's just they're all a little too spread out. What did you dig most?

WILKS: There are quite a number of things I liked, but before I get onto those, I have

to address what you said about the pace of Andromeda being a real step backwards. That's definitely true. The pacing is a huge step backwards, as are the character creation options when it comes to customisation. The menus are a bit of a nightmare too. On the other hand, the improved combat system is a real step forward (aside from players not being able to use companion abilities), and the Nomad ground vehicle is fun to drive around in.

The things I dug most about the game - and this is keeping in mind that I finished the story after 72 hours with 94% completion - kind of seem rather incidental to the overall plot. I love how awkward Fem Ryder is at flirting with her crushes (Suvi and Peebee). I really like most of the companion quests. I think most of the final setpiece is excellent

Hello. We are the cat people from planet YooToob

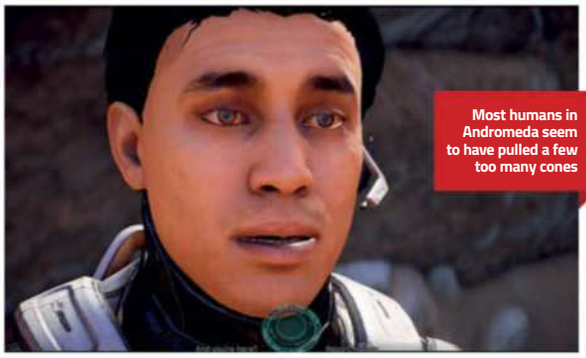
SEQUENCE

HOW TO TERRAFORM

1. Drive a sweet buggy to find three Pylons

2. Play alien Sudoku

2. Run away from a murder cloud



and finally actually captures the grand scale and urgency of the plot. After all the busy work of terraforming and settling planets, you get to see the effects of what you've done and reap the rewards of helping strangers scan space rocks. But leading up to that point there is way too much repetition for my liking, and for every great quest (and there are a bunch) there are twice as many that are either samey or drag you across the sector from planet to planet, forcing you to watch the same takeoff, travel and landing cutscenes over and over again.

HOLLINGWORTH: Man, if I never have to scan another space-rock again, it'll be too soon.

I went Boy Ryder myself, and he's kinda adoringly awkward as well. In fact, the lighter attitude of Ryder is one of the things that's most interesting about the game. As usual, I kind of wanted to play my usual gruff soldier type, but Andromeda simply isn't that kind of game - it's a much more hopeful beast, and that feeds directly into another system that I'm kind of ambivalent about - dialogue.

I can see why Bioware's ditched the whole Paragon/Renegade duality, and I like the fact that the four options that now inform character and dialogue are less moralistic, and more characterful. But, despite the game insisting that how you relate to people - emotionally or logically, for instance - makes an impact, I'm having trouble seeing it, and that's probably a critique that can be applied to the wider game. You make a lot of decisions from the get-go, but it's hard to see what they mean.

Now, that said, I'm only 40-odd hours in - does the game reflect the choices you make in a concrete way?

WILKS: Only really towards the very end did I feel that my choices had any lasting impact on the world or characters, and by very end I mean final mission, and even then the impact of these choices doesn't feel hugely impactful on the whole shebang. I haven't spoken to anyone else who has finished the game yet, so I'm not sure if/how things could have played out differently.

I don't mind the new dialogue system at all but I'm still unsure what two of the dialogue options actually stand for. I mean the heart symbol is obviously for going with your heart, and the cog is for going with your brain, but the spiral and square spiral? One seems to be the option to be kind of a jerk, and the other seems to be an option to be a slightly different kind of a jerk.

The new system is fairly good, but the dialogue it actually revolves around

MASS AFFECT

1. Players can have three abilities equipped at any time. Rather than being locked into a particular class or spec, players can respec their skill for a small price on the ship.

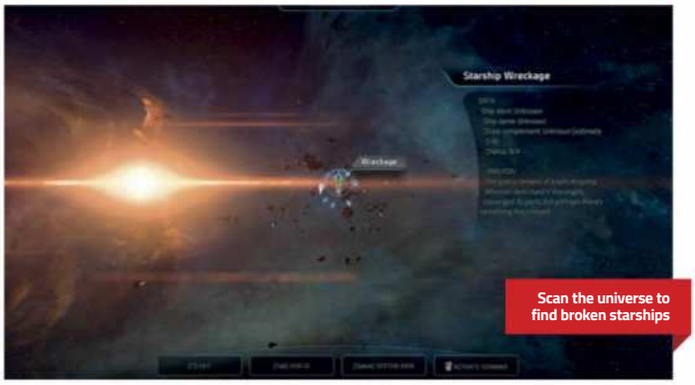
2. The centre of the HUD shows shield, health and chosen companions.

3. Each style of weapon has an associated skill path. With sniper rifles, the skills offer extra damage, stability and even the ability to see through walls when using a scope.

4. Before terraforming, most planets have hazardous environments.

5. The Annointed aren't actually made of fireworks.

6. Under the helmet there are probably some real crazy eyes.



Scan the universe to find broken starships

There are some genuine wow moments when the scale really impresses

is pretty patchy, both from a writing and voice acting perspective. Clancy Brown is awesome as Ryder's dad, as is Stanley Townsend as the crotchety old Krogan warrior, Nakmor Drack. Most of the rest of the main cast is good, but when it comes to the extended cast and additional voices, the constant presence of broad, terrible Australian accents for Angarans (the new friendly alien race in the game) educated on Estraaja (say that fast with a bogan accent) is really jarring and isn't a joke really worth repeating.

I'm being a real downer on the game, but the fact that I played 72 hours points to the fact that I found enough to like to stick with it. I like many of the characters and some of the stories, I like the shooting and the skill system. Andromeda is a decent game that should serve as a good launching point for the new story arc, but it's too disjointed and messy - without taking some of the odd glitches into account - to stand on its own as a truly successful game.

HOLLINGWORTH: Oh, Gods, I did not even get that 'Estraaja' thing and now I want to uninstall the game.

I wonder if this is a game that's designed as a starting point. As I understand it, this is not so much the start of a new trilogy, but a singular game with room for lots of expansion. My fear is that, like many games that rely upon DLC the game in its 'complete' state will be very different to, and possibly better than, its original form. Which is kind of rough on anyone here from day one.

But that said, and all my gripes aside, Bioware has just enough cache, and there's just enough good stuff in the game that I am certainly going to stick through to completion. But I can tell you… my sessions with the game are getting shorter as the repetition really kicks in. But I'm gonna keep hitting those rocks for science, because I kind of want to impress PeeBee.

WILKS: That could be the case, but given the ending, or, more precisely, the Return of the King style multiple endings that go on forever, it seems as though this first foray into the Andromeda galaxy is only the first part of a far larger story that, unless it is severely truncated, can't be finished with DLC. I could be wrong though. It wouldn't be the first time I've had more faith in a developer/publisher than they deserve. I think the best way I can wrap up how I feel about Andromeda is this. By the time I had finished the story, I only had 6% of the game to finish for 100% completion. The quests remaining will take an hour or two to get through, and the remaining planets to chart will take 20-25 minutes. I have the time to do that, but I have zero desire. I might go back to Andromeda when the inevitable DLC begins to drop, but then again, if it's just more planets to terraform and settle, I'll give it a pass. *DANIEL WILKS and DAVID HOLLINGWORTH* PC

A Krogan, a Turian and a human walk into a bar...

> the Australian accents for Angarans educated on Estraaja isn't a joke worth repeating

WHY SHOULD I CARE?

+ You want to bang an Asari
+ You want to bang a Turian
+ You want to bang a different Asari
+ You want to bang a Scot
+ You want to bang the most boring character
+ You want to bang another different Asari

OR TRY THIS:

MASS EFFECT 2
BIOWARE, 2010
▲ Awesome story and action
▼ Silly boss

FALLOUT 4
BETHESDA, 2015
▲ Huge scale
▼ Preston Garvey

DRAGON AGE: INQUISITION
BIOWARE, 2014
▲ Huge fantasy world
▼ Forgettable story

VERDICT:

Hollingworth: Enough of the classic Mass Effect, with enough new mechanics to keep the game fresh **8**

Wilks: A good start to a new story arc but there is too much repetition to make to 70 hour slog satisfying **7**

Nier: Automata

Never change Yoko Taro, never change

DEVELOPER PLATINUM GAMES
PUBLISHER SQUARE ENIX
PRICE $59.99 USD
AVAILABLE AT STEAM
www.niergame.com

The camera in Mass Effect: Andromeda is sometimes a little weird in cutscenes, zooming in too close to see anything, or looking in another direction entirely. Nier: Automata, on the other hand has one of the best, most intelligent and intelligently used cameras we've ever seen in a game. A single move from the camera lets the player know what is coming next and prepare for that eventuality, not necessarily by showing the player what is coming, but simply by changing angle. Much like the original Nier, Automata is a deeply strange and melancholy mash of genres roughly placed under the umbrella of JRPG. While it definitely fits that mould, Nier: Automata is so much more. It's something that could only exist in videogame form, and even then, it something so idiosyncratic that it could only come from Japan. It's the story of androids fighting robots on a future Earth. It's the question of what it really means to be human. It's a story of betrayal and redemption, hope, evolution and endless cycles of despair. It's a third-person action game, a side-scrolling action platformer and a twin-stick shooter. It's bullet hell meets gothic Lolita in the post-post apocalypse. All in all it's a hell of a thing.

It's the future. Hundreds of years ago aliens invaded and all but destroyed all life on Earth with an army of robots. The surviving humans fled to the moon, leaving a ring of satellites manned by goth androids to defeat the robot invaders and make Earth livable for humans again. Why the androids are all goths, and the warriors are elfin women in lace and velvet is never explained and doesn't need to be. It's just one of the factors in the world of Nier Automata that you will come to accept unquestioningly and love. 2B, the first of these androids is first sent to Earth to scout out an area known to contain a "goliath" class enemy. She is joined by the strangely petulant, shorts

> "why the androids are all goths, and warriors are elfin women in lace is never explained and doesn't need to be"

wearing 9S, a scout android who asks too many questions in a society that frowns on all emotion. The opening hour of the game, the search for this enemy, serves as a tutorial and as the gaming version of an *amuse bouche*, letting the player work their way through all of the camera angle related play styles up to and including three massive scale boss encounters, first against a single huge excavator arm, then against two, and finally against the enormous Destructicon that uses the excavators as arms. The end of this sequence also shows off one of the most interesting/alarming mechanics in the game - strategic suicide. Androids can blow their own black boxes to do massive

If they took those blindfolds off they might be able to answer that question.

damage to nearby enemies. Naturally, blowing yourself up comes at a price.

Explosive suicide is an option of last resort when it comes to combat, and one you probably won't want to use too often, and not simply because the benefits don't really outweigh the consequences (resurrection on low life and the loss of XP). The reason you won't use it too often is that you'll be having too much fun with the regular combat systems to even remember it's even an option. The third-person hack and slash gameplay is the most fully fleshed out system and it's every bit as good as you'd expect from Platinum Games, the developers behind Bayonetta, Vanquish, Metal Gear Rising: Revengeance and Transformers: Devastation. Most androids wield two weapons personally and have a Pod, an AI companion that acts as a mobile turret. Basic attacks are comprised of combinations of light and heavy attacks, with each weapon combination available having different optimal basic sequences, such as four light, two heavy. Rather than blocking, damage mitigation in Automata is all down to dodging. These dashes can be quickly comboed together, turning even the most basic fight against the weakest, most pathetically adorable robot into a crazy ballet of carnage. Existing weapons can be upgraded with scrap found throughout the world, and new weapons can be found or purchased from vendors. Equipping new weapons not only changes how much damage a combo can do, but what kind of effect it has as well, encouraging, if not demanding experimentation and changing of gear to suit different conditions.

While not quite as deep as the third-person combat mechanics, the other combat systems are definitely solid. The top down, twin-stick combat

Melee combat is a graceful, tender ballet. With giant swords.

NIER ENOUGH

1. A Critical Evade is performed when the evade button is hit the moment before an attack will hit. It can trigger chip effects.

2. The Pod acts as a mobile turret and can be upgrades with special weapon chips. You can also pat it.

3. Compared to some, this boss is small.

4. Actual robot pilot.

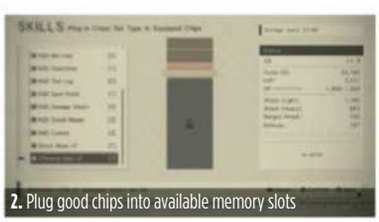
5. Attacking key points on certain enemies can disable attacks or defences.

6. The mini-map isn't that useful.

SEQUENCE

2B 2.0

1. Check shops for upgrade chips



2. Plug good chips into available memory slots

3. Enjoy shockwaves and healing!

At one point they start singing Rick Astley's 1987 hit "Together Forever". Weird.

In the future rubbish bins are sentient and attack anyone who litters in public.

combines the third-person hack and slash with a greater emphasis on the Pod, as bullets from the AI companion can destroy enemy bullets. Side-scrolling combat is mostly more about using range to your advantage, once again emphasising heavier use of the AI, but also rewarding melee combos that have a long reach so as to be able to damage a number of enemies standing in a line. At different times throughout the game, the androids gain access to flight suits (kind of open air Gundam things) that allow them to transform from a robot form to a jet form. When in jet form, the camera angle switches to denote whether the level will be a side-scrolling shooter affair, a vertically-scrolling affair, or a behind the shoulder stunt flying level. It's all fun. When transformed into the robot mode, gameplay mostly resembles that of the twin-stick shooter mode for hack and slash, but swapping shooting for offence and melee for destroying enemy bullets. It all sounds a little overwhelming at first, but after only an hour or two each system makes sense and one move of the camera is all you need to prepare for the next fight.

Character upgrades come in the form of chips that can be socketed into the android to increase abilities and resilience. A basic chip can increase combo damage or show more on the mini-map, while other chips can cause the action to slow for a brief while after performing a critical evade (dodging at the last possible moment) or add a shockwave to each sword attack. Other chips can be socketed into the Pod to give it extra abilities, like a massive long range laser or a short range hammer, or to automate functions such as using healing devices on the android when their health is reduced to a certain threshold. Again, experimentation and customising the android for different encounters is encouraged.

Bored of hack and slash? Don't worry it'll be a bullet hell shooter shortly.

> a small, immaculately designed open world that has hundreds of years of history written into it

WHY SHOULD I CARE?

+ You like your killer androids to look like maids

+ You want your games to make you depressed

+ You hate whimsical robots

+ You have 26 possible endings

You may have noticed that throughout most of the review, the identity of the main character has been left a little vague. There is a good reason for this. Finishing Nier: Automata is really just the beginning of the game. To know the story of the game and to see it from all the required angles takes making it to the first five endings and playing as three different androids, each with a different approach to action, a different combat system and a different take on the events of the story. A second playthrough sees you as the curious 9S and showcases his ability to hack into robots to damage or control them. A third puts you in the shoes of the enigmatic A2 with her ability to go berserk, dealing extra damage at the cost of constant damage to herself. Each playthrough is different, not simply because of the character. The story changes due to shifted approaches and perspectives in the second play, and the third is pretty much a prequel adventure. It's an incredible achievement.

On top of the excellent combat is an incredible soundtrack, a deeply sad, extremely strange but strangely relatable story, a small but immaculately designed open world that has hundreds of years of history written into it, and some pretty memorable characters. There are some problems - sometimes the framerate hitches and textures pop in, and those of you wanting to play with a keyboard and mouse should give up on that idea as those controls are terrible in comparison to a controller, and the general weirdness that permeates the game may not be for everyone - but if you're after a lengthy, engrossing and extremely memorable experience, Nier: Automata is here, demanding to be played more than once. *DANIEL WILKS* PC

OR TRY THIS:

ENSLAVED
NINJA THEORY, 2013
▲ Monkey Magic!
▼ Not goth

BEYOND GOOD AND EVIL
UBISOFT, 2003
▲ Amazing characters
▼ No sequel yet

MIDDLE EARTH: SHADOW OF MORDOR
MONOLITH PRODUCTIONS, 2014
▲ Amazing combat
▼ No robot angst

VERDICT:

Sometimes frustrating but always compelling, Nier: Automata is a wondrous and strange experience that could only ever be a game.

9

Samsung SSDs – not like the rest

UNDERSTANDING HOW A **SAMSUNG 960 PRO** OR **EVO** MAKES ALL THE DIFFERENCE

If there's one area of PC hardware that has blown through speed barriers exponentially, it's today's Solid State Drives, or SSDs for short. With the latest drives delivering much faster performance than drives released just a few years ago, they've experienced explosive growth when it comes to throwing data around your system. And there's one company that has consistently scored highly in product reviews, which is why you'll find its drives in most pre-built gaming systems. Samsung has been the leading SSD-maker for several years now, and there are several good reasons why its drives are outstanding.

▲ **Up to 3,500 MB/s sequential read and 2,100 MB/s sequential write**

WHAT'S AN M.2 DRIVE?

First, a quick refresher if you're not familiar with M.2 SSDs. They look a little like a stick of memory, and require a special M.2 slot on your motherboard, which is usually nestled by your PCIe slots. You can also use an M.2 to U.2 adaptor, but U.2 ports are about as common as USB 1.0 ports on today's motherboards. M.2 drives bring several benefits over the original SATA 3 6Gbps connection used on the first 2.5-inch SSDs, namely a huge increase in bandwidth. They have four PCIe 3.0 lanes piped directly to the M.2 slot, hitting a speed of up to 32Gbps, which is almost a sixfold increase over the SATA 3 6Gbps speed. This is why Samsung's 960 PRO can hit a huge sequential read speed of up to 3,500MB/sec, and sequential write speeds of up to 2,100MB/s, making them incredibly fast in their category. Compare this to SATA 3 6Gbps drives which maxed out at 600MB/sec whilst doing sequential writing and you can see the huge boost that M.2 delivers to sequential reading and writing.

WHY NVME IS SO IMPORTANT

However, not all M.2 drives are created equal. There's another specification that you need to think about when buying an M.2 drive, and it's called NVMe for short. If you want to impress your friends, you can rattle off what this stands for - Non-Volatile Memory Host Controller Interface Specification. It replaces some of the old technology used on mechanical drives, allowing NVMe SSDs to access flash memory extremely fast. Key to this is the ability to process multiple queues at once. NVMe really helps boost this. This means that NVMe equipped drives can process a staggeringly huge amount of random read and write operations, otherwise referred to as IOPs.

In the case of Samsung's flagship 960 PRO NVMe drive, this means it can handle up to 440,000 read IOPs in its largest drives, while random writes is up to 360,000. Compare this to our non-NVMe equipped drive, these numbers are at least up to twice as fast for writes, and often up to four times faster for

> **The problem lies in the fact that most people assume all M.2 drives come with NVMe, but they don't.**

reads. The problem lies in the fact that most people assume that all M.2 drives come with NVMe, but they don't. Many M.2 SSDs have no support for NVMe, and can be at least half the speed of NVMe powered beasts. However, all of Samsung's latest 960 series SSDs are equipped with NVMe as a standard, so you can rest assured you're getting the fastest of our fast SSDs.

▲ **V-NAND technology allows Samsung to fit more memory on M.2 drives**

LANE FREEWAY

There's also the fact that not all M.2 drives operate using a full four lanes of PCIe bandwidth, with some models only using two. Again, Samsung doesn't scrimp in this regard, always utilising the full four lanes offered by M.2. Yet Samsung is also renowned for being extremely affordable considering the performance on offer. Using its technical wizardry, and the fact that it is one of the only SSD makers who builds every SSD component in their drives in-house, and Samsung managed to extract incredible performance from relatively affordable TLC memory on its EVO range of drives. The company has pioneered a 3D format of stacking the memory, which means it can also fit more memory onto the tiny SSD drives, up to 2TB in the 960 PRO. It's called V-NAND, and is only used by Samsung. It's based on the ability to stack up to 100 layers on top of each other, using a technique known as Channel Hole Technology. This allows memory cells to connect vertically with each other, whereas traditional Samsung 2D memory can only communicate horizontally. Samsung's SSD 960 PRO 2TB's remarkable technology packs in a staggering 48 layers in each of the 16 chips in each die package, for a total of 768 layers of memory – all in a sliver the size of your finger!

ACCELERATE YOUR PC

The end result to gamers when using Samsung's latest M2 SSDs is a huge speed boost to nearly everything you can think of doing on your PC. Once you're at the desktop, applications will fire up in the blink of an eye, and switching between open applications will be snappy and responsive (provided you've also got enough system memory). When it comes to games, they'll often load incredibly quickly, and level load times are dramatically quick. This can be super-important with online games, where getting in early gives you and your clan time to set up.

Games that rely on streaming from the hard drive regularly, such as open world games like Fallout 4, should also experience less stuttering and chopping due to storage bottlenecks, as the SSD feeds data to the system memory so fast. It's no wonder then that Samsung drives should be the SSD of choice for gamers and anyone who demands absolute top performance.

DVD Contents

A VINTAGE DISC

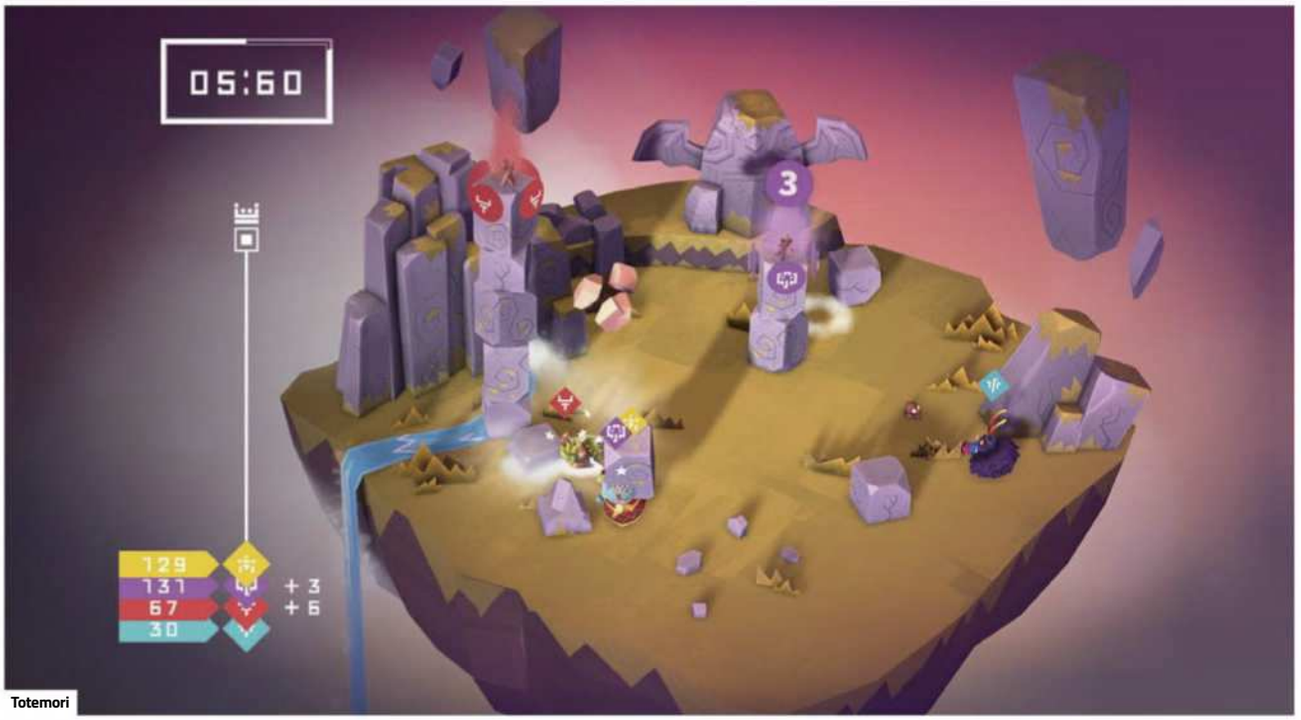
With the 60 bazillion games that seem to be released every 30 seconds, it can be hard to keep track of all the new games you should be playing. Unfortunately, due to production schedules, what is freshly released at the time of the disk is often a few months old by the time you get to see it.

But that can be a GOOD thing. I often include early access games and alpha games which are still getting the bugs shaken out. And a couple of months maturity can mean the difference between frustration and joy. So rather than looking at the disk as 'older stuff' it can be looked at as 'matured vintage'. And this month's disk certainly has the kind of potential to move into the 'excellent vintage' category.

The PCPP Team.

37 FREE GAMES AND DEMOS!

- 3D Chess Demo
- Alchemic Jousts Demo
- Bad Pad Demo
- Bitku
- Canvas The Gallery
- Cartesian
- Circles Demo
- Construct: Escape the System Demo
- DED
- Double Cubes Demo
- Estranged : Act 1
- Expect The Unexpected Demo
- Frog Hop Demo
- Fumiko! Demo
- Guild Quest
- Kuso Demo
- Labyrinth
- Ley Lines
- Once on a Windswept Night
- Out Of The Box Demo
- Pipejob Demo
- Putrefaction 2 Void Walker Demo
- RED
- Red Haze Demo
- Runt of the Litter Demo
- Shop Heroes
- Soda Dungeon
- SoulSet Demo
- Tactical Genius
- Tap Adventure: Time Travel
- The Puppet Master
- Tiles & Tales
- Totemori
- Unhack 2 Demo
- Wander No More
- We Were Here
- Wells Demo



Totemori

Installation instructions included on the disc. Browse the disc and launch **index.html** for more.

USING THE DVDS
PC PowerPlay DVDs are suitable for use in almost any computer but the software contained on the medium is for Windows operating systems only. Because each PC is different, PC PowerPlay and Next Media cannot guarantee the DVDs will operate as expected on every system, despite strict adherence to Windows compatibility.

LOADING
The DVDs are set to autostart. On insertion it will load the DVD's Terms and Conditions of Use disclaimer in your default Web browser. If the DVD failed to autostart, you can load the menu manually by running the file called start.htm in the root directory using Windows Explorer.

VIRUSES
These DVDs are rigorously checked for viruses during production, however, PC PowerPlay can make no guarantees to this end. Next Media always recommends that the DVDs be scanned using your own anti-virus software on first and subsequent uses.

INSTALLING SOFTWARE
Simply click the install/download link under a file's description to launch the installation program. please ensure that all other programs are closed and that any anti-virus software is disabled before performing a software installation. Due to STEAM region locking, not all content may be available toutside Australia.

TECHNICAL SUPPORT
PC PowerPlay assumes the end-user of these DVDs has the necessary computer knowledge required to operate and install software from this product, and cannot provide technical support either for this or for any of the software contained on this disc.

DVD REPLACEMENTS
PC PowerPlay can only replace DVDs that were damaged or faulty at the time of purchase. If you think a DVD fits into one of these categories then please contact the DVD Producer immediately to assess whether a replacement needs to be sent out. email: dwilks@nextmedia.com.au

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Ghost Recon: Wildlands

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DEVELOPER UBISOFT
PUBLISHER UBISOFT
PRICE $59.99 USD
AVAILABLE AT STEAM, UPLAY, RETAIL
ghost-recon.ubisoft.com

One of the central philosophical debates in videogame criticism is whether or not a game should be "allowed" to only get good after ten hours. Should we, as critics, mark a game down, if it only rewards people who invest serious time in it?

Wildlands seems like an ideal candidate for further exploration of this problem. Most reviews were written soon after release, by critics who binged on the thing over a foetid weekend of 40, 50 hours of grinding through Bolivia and headshotting poverty-stricken and religiously deluded coke gangsters.

And as with so many Ubisoft games, you see the two contrasting opinions: "This game is awesome!" versus "This game is boring and repetitive and the open world is too big and empty!"

What's the truth of Wildlands? Has it been designed for players to chew through in one epic, endless setting? Or is it supposed to be a treat, a couple of hours here and there with mates? Is the game kind of repetitive because it's meant to be an experience you have in discrete chunks of time, rather than as a stop-everything-else-until-you-finish-the-story narrative?

A truly great developer could skilfully devise a semi-optional story that rewards hardcore fans who don't want to play anything else, while also letting that fan's friends drop in from time to time for a bit of co-op.

But there are a bunch of problems that prevent this, chief among them the way that completing a co-op mission will "mark off" milestone enemies in your singleplayer experience. You can find yourself dropped into a mission online mere moments before three other people shoot some NPC, and then that mission is "done". Which means not only are missions repetitive, they also occasionally complete themselves.

Not exactly a refinery of well-oiled gameplay ideas.

> "can you please auto-design some missions that use the skidoo and the helicopter, kthxbai"

WHY SHOULD I CARE?

+ You love stealth-killing drug dealers, repetitively.
+ You love stealth-killing drug dealers, repetitively.
+ You love stealth-killing drug dealers, repetitively.
+ You love stealth-killing drug dealers, repetitively.

Around a decade ago, open world games faced a challenge: developers were coming up with amazing ideas - huge maps, semi-autonomous NPC camps, vehicles, customisable weapons! - that were just too big to work properly on the PCs of the day.

Now, the technology has eclipsed the developer. Bolivia, Wildlands' playground, is huge. Far, far too big for any team of mortal developers to populate with enough variety in the time they had to build the game. So we're in a new trough of design: waiting for someone to come up with a "directed procedural" algorithm, a way to let developers say to the program: "Uh, okay so we've put this mountain here, can you please auto-design some missions that ensure the player gets to use the skidoo and the helicopter, and make them lead up to the cable-car boss battle we're doing manually, kthxbai."

And then the computer does a good job of building a bunch of "random" missions that actually feel different and unique, instead of just "mark all the baddies with your drone and then press one key to have your AI teammates shoot 'em all in the head pow pow."

Wildlands, in small doses, with mates, will entertain. As a hearty meal though, it could leave you bloated but malnourished. *ANTHONY FORDHAM* PC

OR TRY THIS:

BOILING POINT
2005, DEEP SHADOWS
▲ Early example of open world
▼ Broken example of open world

FAR CRY 2
2008, UBISOFT MONTREAL
▲ Still refreshingly original
▼ Snakebit? Dig out that bullet!

ARMA 3
2013, BOHEMIA
▲ Proper hardcore milsim
▼ Anally hardcore milsim

VERDICT:

Utilises the amazing PC technology of today to be, eh, okay.

6

Loot Rascals

Hex appeal

DEVELOPER HOLLOW PONDS
PUBLISHER HOLLOW PONDS
PRICE US$15
AVAILABLE AT STEAM, HUMBLE, ITCH.IO
lootrascals.com

Loot Rascals combines the strategy of deck building, the blind luck of random drops, and the constant tension of a Roguelike. On paper it looks like a really solid set of gameplay mechanics, and in practice it mostly delivers, but it never quite managed to hook me in the way I initially thought it might.

There's a silly premise about travelling to an alien planet that is possibly also a theme park to rescue someone called Barry who is possibly a robot with your friends who include another robot and a giant pink baby man. A British man narrated all this at me during the opening cutscene but it was clearly all utter gibberish so I forgot it immediately, and I advise you do the same.

All you need to know is: there are rascals and you loot them. And you also fight them. If they die, you carry on; if you die, you restart from the beginning.

All this fighting and looting plays out on a hex grid that sprawls off in all directions and is only revealed as you move and the algorithms make their procedurally generated magic. Somewhere in this labyrinth of hexes, among the branching, looping and dead-end paths, is an exit. Reach it and you move on to the next level.

It's turn-based in the sense that time (and indeed your enemies) stand still until you move into a new hex. Enter the same hex as an enemy and you fight, the outcome determined in moments based on your respective stats. There's a short day/night cycle every few turns, which is important because some enemies will get the vital first attack in if you encounter them at night, and vice versa. Juggling when to attack is just about the most significant tactical consideration Loot Rascals demands of you.

Big head pink man baby and robot save Barry from things

> "it was clearly all utter gibberish so I forgot it immediately"

WHY SHOULD I CARE?

+ You dig the "just one more run" grind of a Roguelike
+ You simply cannot share a hex with someone else
+ Your best friend is a giant pink baby man

The most significant is building your deck to determine your stats and special abilities. You set out with six cards consisting of the most basic attack and defence stats. Defeated enemies can drop new cards that you can add to your deck to a total of ten, arranged in two rows of five. Some cards grant bonuses, say, to the cards to its immediate left and right or only if placed in an even numbered column or if its the only one of its type in your deck or for what feels like an endless number of reasons.

I enjoyed tweaking my deck to get the most out of the cards at my disposal. There's plenty of variety, too, particularly when the drops mean your deck is heavily weighted to either attack or defence, and you have to adjust your approach accordingly. But it can feel too random at times, and your prospects of progress too heavily reliant on finding good cards. Overall Loot Rascals feels like it lacks the depth and high skill ceiling of a truly great Roguelike like Spelunky.

DAVID WILDGOOSE PC

OR TRY THIS:

SPELUNKY
MOSSMOUTH, 2008
▲ The best
▼ Ruins other games

FTL
SUBSET GAMES, 2012
▲ Spaceships!
▼ Everything's on fire

HAND OF FATE
DEFIANT, 2015
▲ Infinite quests
▼ Not a Roguelike

VERDICT:

A decent Roguelike where cards are loot.

6

Vikings: Wolves of Midgard

You're Thor? I can hardly walk!

DEVELOPER GAMES FARM
PUBLISHER KALYPSO MEDIA
PRICE $39.99 USD
AVAILABLE AT STEAM
www.kalypsomedia.com

Although Vikings: Wolves of Midgard has all the hallmarks of fitting in nicely with the established style of action RPGs - there is a levelling mechanic, skill trees, dropped loot and the like - in play the game feels like a modern version of something much older. Rather than being an RPG, action or otherwise, Vikings instead feels like something older, less nuanced and more concerned with instant gratification. It feels a little something like Gauntlet mixed with an isometric brawler a-la Victor Vran. That's not at all a bad thing.

What Viking lacks in narrative depth it makes up for in other places. Players take the role of a Viking warrior or Shieldmaiden of the Ulfung clan, a group of castoffs and outsiders. After the village is almost destroyed by giants (not out of malice, but because it was in the way), the player is elected to chieftain and it's up to them to keep the town safe, pillage neighbouring villages and, of course, stop the fimbulwinter (*Of course! - Sub Ed.*) and the end of Asgard and Midgard. All in a day's work for a Viking, not that they seem to want to have any part in the struggle. The player character is one of the most hilariously and pointlessly ill-tempered protagonists around. There is barely a line of dialogue that isn't an insult or complaint. Have to rescue someone; bitch about how weak they are and complain that you have better things to do. Talk to a seer; complain that you haven't killed anything in hours. It grows a bit tiresome after a while, but we imagine keeping up a constant stream of disdain and complaints is pretty tiring as well.

> extreme cold means you can't be away from a fire for too long before taking damage from frostbite

WHY SHOULD I CARE?

+ You complain about having to help anyone
+ Power makes you grumpy
+ You really hate fishermen and miners

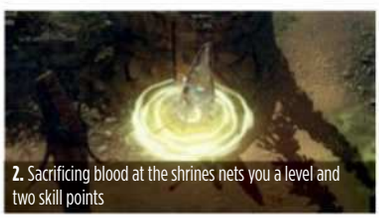
Rather than having named classes to choose from, players instead choose a god to worship and receive certain boons as long as they are wielding a weapon that is approved by the god in question. Odin, for example, is associated with the staff. With a staff equipped players can access staff related active and passive skills. Loki is the god of dual wielding, Tyr is one handed and shield, Thor is two handed weapons (that aren't staves) and Skathi has dominion over bows. While it is possible to spend the points accrued through levelling on more than one skill tree by equipping a secondary gear set, you're better off specialising for the most part.

Levelling is an interesting affair in Vikings, as it combines both traditional levelling aspects with some rather new ones. Rather than levelling being an automatic thing, gaining a level can only be achieved by praying at a shrine, either back in Ulfung village or one found in a mission level. Experience is also gained differently. Experience comes in the form of blood, and each level gained requires the sacrifice of an ever growing amount of blood at a shrine. Blood is accumulated through combat but must be picked up. Killing multiple enemies at once, keeping up a kill streak without being hit, and other flashy moves makes monsters drop more blood, making levelling faster for those that fight harder. Each

SEQUENCE

BLOOD FOR ASGARD!

1. Shrines can be found in the various levels as well as in the Ulfung village



2. Sacrificing blood at the shrines nets you a level and two skill points

3. Skills have level restrictions, so you don't have a great deal of choice as to what to choose next

Odin would approve of this beast being hit with a staff.

dropped blood orb also heals 1% of the character's life.

Combat is a fast and enjoyable and while keyboard and mouse control is possible and decent, the game is definitely best played with a controller as it feels more naturally at home and immediate. The left stick controls player movement and the right stick executes a dodge roll with a quick window of invulnerability. Mastering the roll is one of the keys to being successful in combat, as not only does the roll allow players to avoid damage, when fighting large creatures it allows players to roll behind them for automatic critical damage. The left bumper triggers a heal and the right the magic of an equipped amulet. The other buttons are taken up by attacks and special abilities, with more being slotted into the controller as they are accrued.

In addition to monsters, the environment is often the enemy in Vikings. The extreme cold means your warrior can't be away from a fire for too long before they begin to take damage from frostbite, and in a swamp spending too much time near the poisonous gas that seeps from the mud can kill. It's an interesting mechanic that ensures that players have to be constantly moving and cognisant of where they are so as to either quickly backtrack to the last fire or patch of clean air, or change forward to hopefully make it to the next before damage starts.

There isn't a lot of depth to Vikings. Equip the best gear you can, head to the next linear mission and kill everything while looking around for things that can help complete side quests, make your way to the big boss at the end of the level and kill it, then do it again at a different location. But depth isn't really the point or even needed. Viking: Wolves of Midgard is immediately enjoyable thanks to the fun and immediate combat, and it grows to be extremely satisfying by the end thanks to the difficulty curve. It might not have the most replayability thanks to the unchanging levels and missions, but that first playthrough or two will be a blast. *DANIEL WILKS* PC

FRIG THIS

1. Stamina is used to activate skills and perform dodge rolls.

2. All skills outside of basic attacks work on a cooldown.

3. Kill enough enemies and you can activate your Viking Rage. Each class has a slightly different rage effect.

4. Getting long hit combos or killing multiple enemies at once nets extra blood.

5. Viking combat created gibs quite frequently.

6. Each stage features side objectives that net extra wood, gold and iron for crafting if completed.

OR TRY THIS:

VICTOR VRAN
HAEMIMONT GAMES, 2015
▲ Weapons based powers
▼ Gets repetitive

HAND OF FATE
DEFIANT DEVELOPMENT, 2015
▲ Deck building hack and slash
▼ Sequel not out yet

FORCED SHOWDOWN
BETADWARF, 2016
▲ Furious combat
▼ Twitch based

VERDICT:

It's not the most complex or nuanced of games, but the boss battles are great and the combat is brutally compelling.

7

Tech 261

YOUR GUIDE TO PC GAMING HARDWARE

Testing, testing

The method to the madness

It's a new era for the PC. After years of dominance, Intel finally has a real fight on its hands in the form of AMD's new Ryzen processor, based on its Zen architecture. As you'll see, we're rather excited about this chip, especially if you do more than just game on your PC. However, our review is bound to spark a bit of controversy, as our gaming tests don't show it to be quite as impressive as hoped.

This is because I always test CPUs in games with the GPU minimised as a bottleneck. This means testing at low resolution, and disabling GPU-dependent features such as anti-aliasing and shader effects. On the flipside, I crank up the settings that push the CPU to its limit – things that maximise the draw calls and polygons in each scene, such as draw distance and object detail. Now, some might argue that this doesn't recreate the real world performance of an overall system, but that's not our thinking here at PCPP. When testing a component, I want to limit every other bottleneck in the system so that I can measure the true performance of that component – not the system as a whole. This is why I use the fastest CPU possible when testing GPUs, or the fastest motherboard when testing SSDs. It's all well and good to see how a game runs at 1080p, but that doesn't indicate what happens when the CPU is the limiting factor, and isn't a true one-to-one comparison when measuring CPUs against each other.

Having said that, I'm going to re-examine our benchmarks in the near future. They're getting a little long in the tooth, and I think it's probably worth doing a bit more testing in real world scenarios. Mainly because this will clear up the confusion some readers may have as to why I test the way I do, but also to start testing more DX12 titles and games with more advanced graphical features/demanding performance. I'd love to hear your thoughts on the matter, so feel free to drop me a line at bennettring@hotmail.com with your suggestions. In the meantime, welcome to the reignition of the CPU fire. Thanks AMD – it may have taken you a while to get your CPUs back in form, but the wait has been worth it. And as we see more games make use of multiple cores, the story is only going to get even better for Ryzen's multi-cored design.

Bennett Ring
Tech Editor

Our Power Award is given to products that are best in class no matter your budget.

Our Smart Buy Award goes to products that balance performance with price tag.

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THE PCPP TESTBENCH

CPU
INTEL I7 3770K
intel.com.au

MOBO
GIGABYTE Z77X-UD3H
gigabyte.com.au

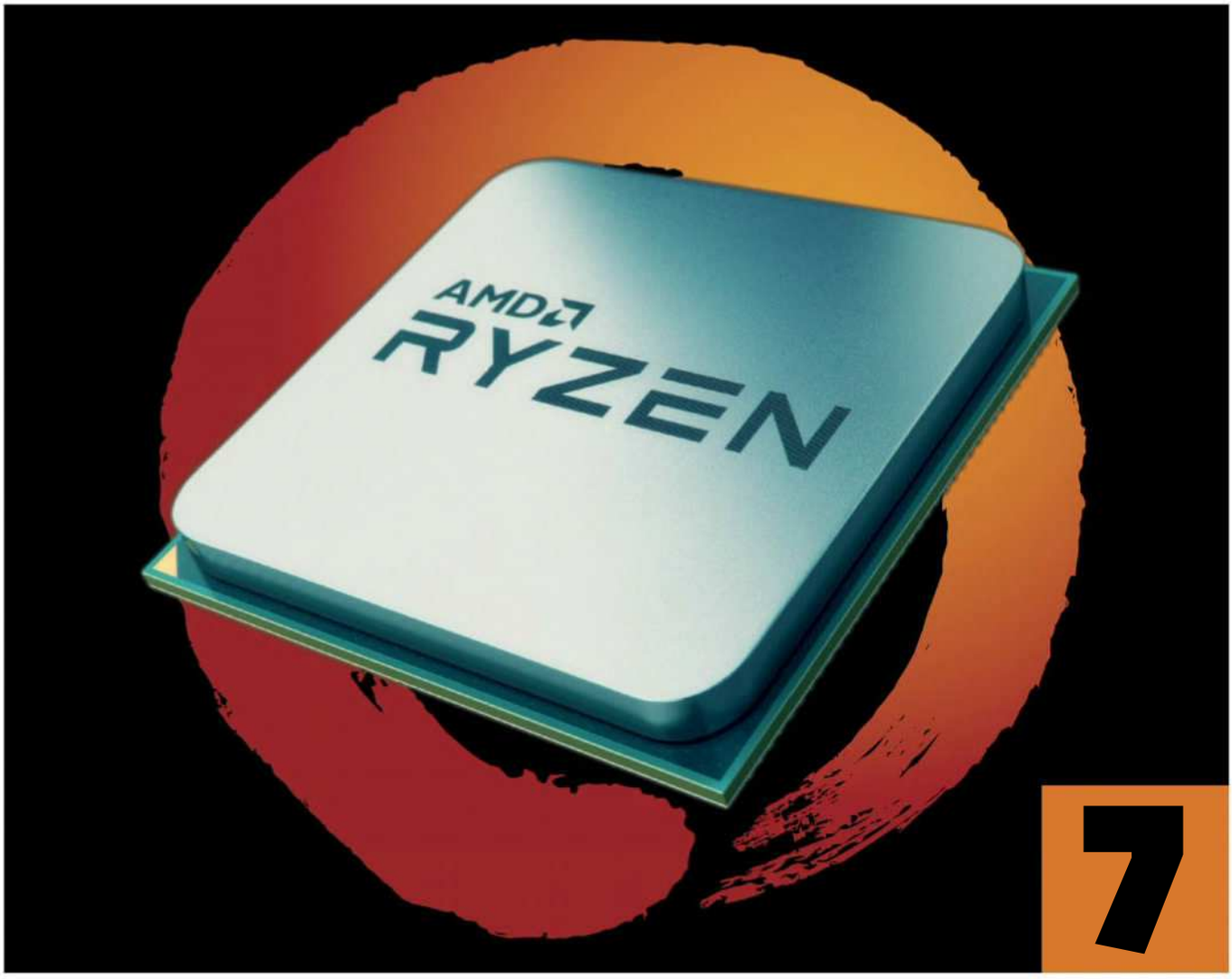
SSD
CORSAIR NEUTRON
corsair.com

RAM
8GB PATRIOT DDR3 2,133MHz
patriotmemory.com

GPU
RADEON HD 7970
amd.com

PSU
CORSAIR AX860I
corsair.com

DISPLAY
DELL U2711
www.dell.com.au



CPU

AMD Ryzen 7 Gaming

BENNETT RING is happy to finally see some CPU competition

Thank you AMD. It might have taken four years to go from the drawing board to churning chips out on the factory line, but your new Ryzen CPU is hopefully going to do wonders for PC gaming. You see, we've been bored out of our skull with the monopoly that Intel has had for the last five years when it came to CPU performance, especially when it came to games. But in one fell swoop you've managed to deliver a brand-new CPU that promises to reignite the CPU wars, finally challenging Intel's dominance and spurring them into action to lift performance by more than a few digits each year.

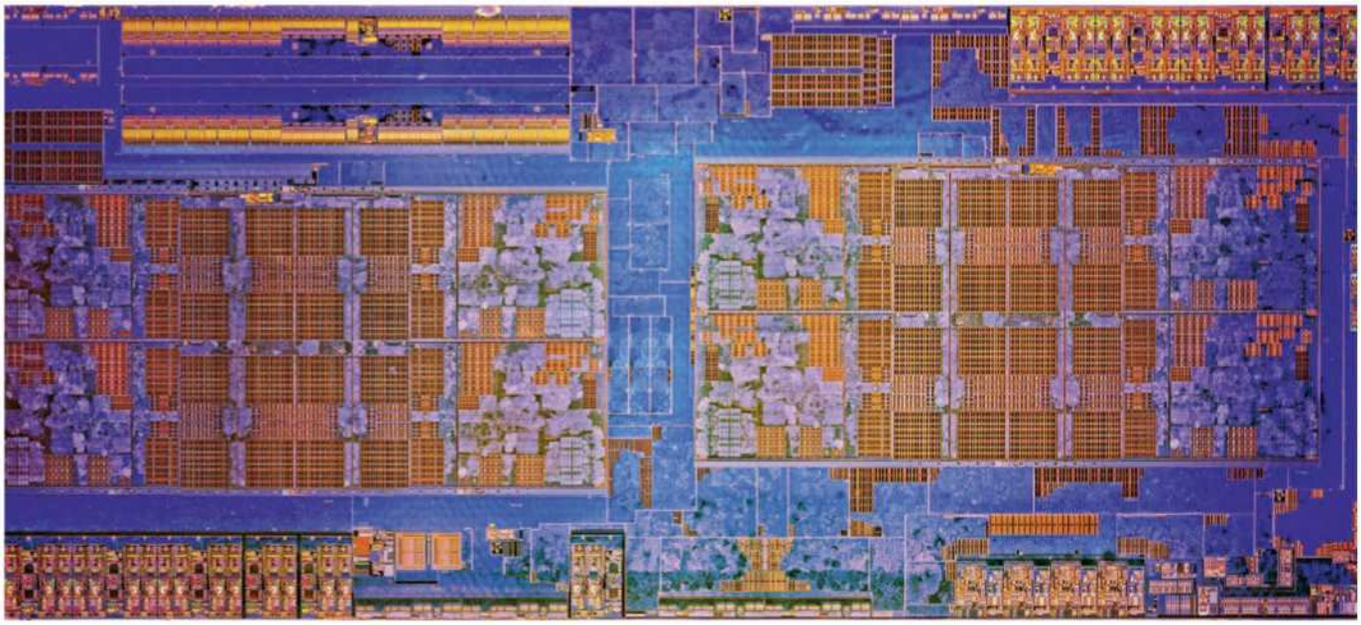
Well, that's the plan with Ryzen. Unfortunately the story about this chip's performance isn't such a straight tale – while it does whip Intel into shape in certain scenarios, when it comes to pure gaming grunt, it's not quite the be all and end all we expected. Before we look at the reasons why, let's examine the initial three launch chips, and take a look at what's underneath that heat spreader.

A WORKSTATION MONSTROSITY

At the heart of all of the new Ryzen chips is AMD's shiny new Zen architecture. And when we say new, we really mean it – there's none of the piddly little updates we've grown accustomed to over the last half decade. AMD went back to basics with the design of this x86 chip, focusing on improving raw Instructions per Cycle, or IPC. This is basically how much work each core in the CPU can handle, and it's an area where Intel has traditionally lorded it all over AMD for so long.

The initial design goal for Zen was to hit a 40% IPC performance increase, all while maintaining low power usage. AMD didn't manage to this increase though... they beat it. In some cases, the new Zen architecture is up to 52% faster than its previous core architecture, making it quite possibly the biggest single leap in core performance we've ever seen, and bringing it within spitting distance of Intel's chips.

AMD has launched three new Ryzen chips to begin with, and they're all eight-cored beasts. At the high-end we have the Ryzen 7 (aka R7) 1800X. This eight-cored chip is designed to take on Intel's eight-cored i7-6900K, but at half the price, costing a mere $699 versus $1500 for the Intel chip. It has a base frequency of 3.6GHz, which then boosts to a guaranteed



▲ There's gotta be a market for shipping hardware in this colour scheme

Turbo speed of 4GHz. However, there's still a little more headroom thanks to the X on the end of the product name, which means this chip is endowed with XFR, or Extended Frequency Range. In the right thermal conditions, this can add an additional 100Mhz to the chip, in 25MHz increments, promising a top speed of 4.1GHz.

Next up is the R7 1700X, and it's basically identical to the 1800X bar some slight speed drops. Base speed is lowered to 3.4GHz while Boost hits 3.8GHz, and it too features XFR. At just $569, it's considerably cheaper than the 1800X, while not missing out on much of the performance. Finally we have the budget model, and this is the one overclockers are most excited about. The R7 1700 again is functionally identical to the other two chips, though it doesn't have XFR. The frequency has also dropped, down to 3GHz at base and 3.7GHz for Boost. Yet there are a plethora of online overclockers who have easily hit 4GHz with this chip, putting this $469 baby on par with the top of the line R7 1800X. By the way, all three chips are multiplier unlocked, allowing for simple overclocking. The top-end R7 1800X isn't much of an overclocker though, with our sample maxing out at 4.1GHz.

▲ Three new coolers but only the budget Ryzen ships with one

There are also three new coolers for use with these chips, though the two most expensive CPUs don't include one at all. There's the top-end Wraith Max (38dBa), mid-range Wraith Spire (32dBa) and finally the Wraith Stealth (28dBa), but none of these were available at the time of our review. Instead AMD sent us a Noctua NH-U12S SE-AM4 for use during our testing. Only the R7 1700 comes with a cooler, in the form of the Wraith Spire. They all utilise a new spring-screw clamping mechanism, and also feature an RGB ring around the top. The good news is that many existing coolers will work with the new socket design, as the likes of Corsair, Thermaltake and Noctua are either providing free adaptors, or charging a minimal $20 cost for a clip upgrade kit.

Speaking of the new socket, all Ryzen chips are now using the latest AM4 socket design, which fits in the new pin count of 1331 pins. AMD has stuck with its usual pin-on-CPU design, as opposed to Intel's reverse design, where the pins are mounted in the socket. Each CPU is comprised of 4.8 billion transistors, and they're built using GloFo's 14nm FinFET process, which has allowed AMD to deliver exceptionally good TDP numbers for each chip. The top two hit 95W, while the 1700 maxes out at just 65W, provided you don't overclock it. This small manufacturing process also means that they chips are relatively small, with a die size of just 192 square millimetres, which makes them more affordable to build.

> "our benchmarks show that the Zen architecture hasn't quite caught up to Kaby Lake"

WHAT MAKES ZEN TICK?

At the heart of Zen are its new CCX Modules, aka CPU Complex. Each of these has four CPU cores, 64kb of L1 I-cache, 64kb of L1 D-cache, 512KB of L2 cache per core, and 8MB of L3 cache shared across all four cores. The R7 processors all use two of these CCX modules, hence why they deliver eight cores with a total of 16MB of L3 cache. By going with this format, it'll be easy for AMD to deliver a quad-core version, which is known as the X5. More about that later.

While Ryzen is an eight-cored CPU, it actually can handle up to 16 threads.

Ryzen R7 1800X Benchmarks

Min FPS Avg FPS Score

Cinebench R15 Single Thread

HIGHER IS BETTER

PCMark 8 Home Open CL Accelerated

HIGHER IS BETTER

Cinebench R15 MULTIThread

HIGHER IS BETTER

PCMark 8 Home Non-accelerated Conventional

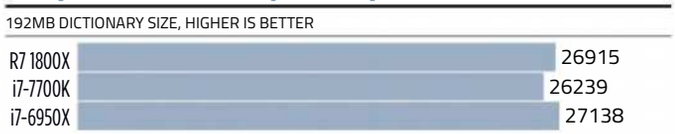
HIGHER IS BETTER

HandBrake nightly build: 1.1GB 4K Video to Matroska H.265 MKV 720p30

SCORE TIME (SECONDS - LOWER IS BETTER)

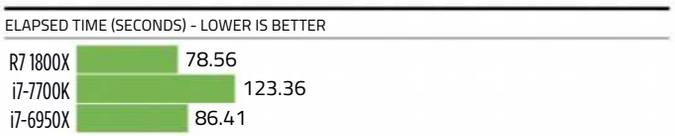
7-Zip Multithreaded file compression

192MB DICTIONARY SIZE, HIGHER IS BETTER



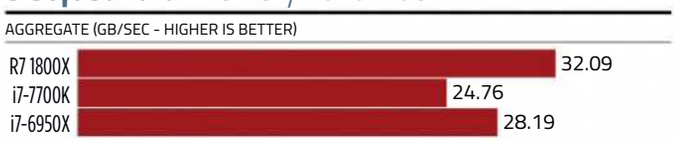
POV-RAY: Benchmark scene

ELAPSED TIME (SECONDS) - LOWER IS BETTER



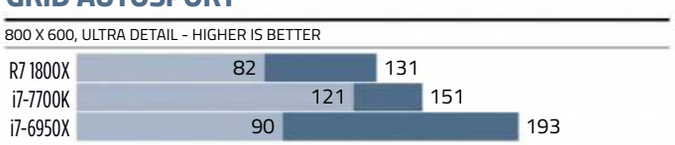
SiSoft Sandra: Memory Bandwidth

AGGREGATE (GB/SEC - HIGHER IS BETTER)



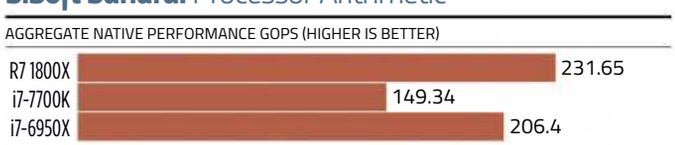
GRID AUTOSPORT

800 X 600, ULTRA DETAIL - HIGHER IS BETTER



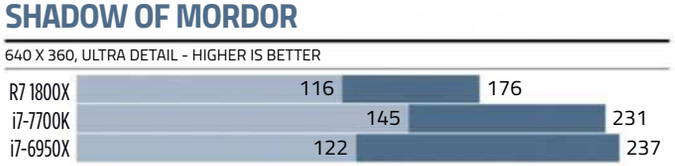
SiSoft Sandra: Processor Arithmetic

AGGREGATE NATIVE PERFORMANCE GOPS (HIGHER IS BETTER)



SHADOW OF MORDOR

640 X 360, ULTRA DETAIL - HIGHER IS BETTER

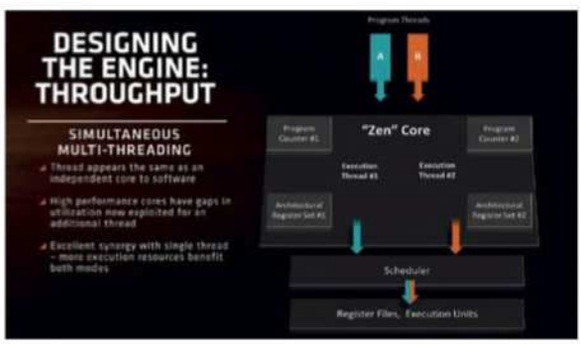


SiSoft Sandra: Processor Multimedia

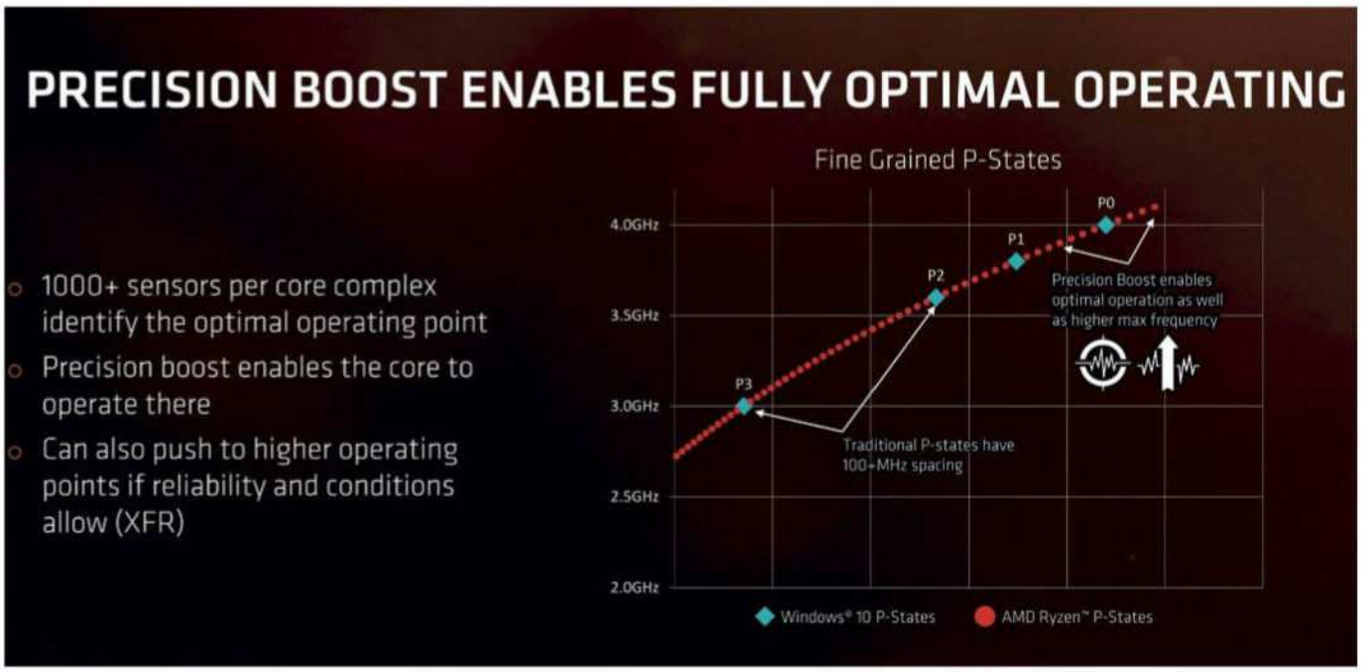
AGGREGATE MULTI-MEDIA NATIVE PERFORMANCE (MPIX/S - HIGHER IS BETTER)

This is because AMD has implemented a technology that is very similar to Intel's HyperThreading, but which it calls SMT, or Simultaneous Multi-Thread. It's taken a slightly different approach to Intel though; Intel uses joint schedulers and buffers to enable its support for twin threads per core, while Zen has independent dual schedulers, one for INT and the other for Floating Point.

The other major reason for the leap in IPC performance is known as SenseMI. This is basically an umbrella term for five different technologies that make use of over 1000+ sensors embedded within the CPU. Every millisecond, they check the frequency, temperature and power usage of various components within the CPU. This way it can automatically boost voltage to areas where it's needed most, while also cutting power where it's not needed. This allows CPU to operate at maximum frequency when required, and then power down when it's not, delivering both performance while also lowering power usage.



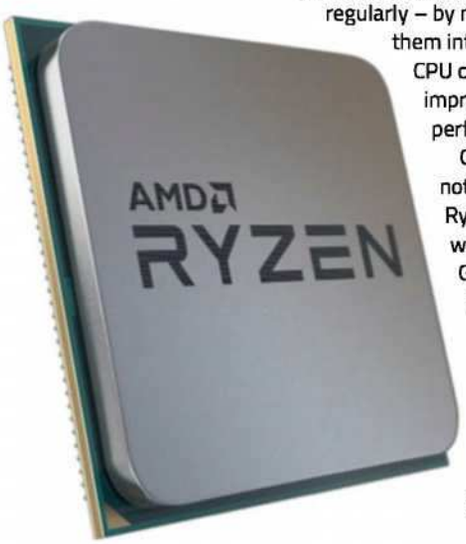
▲ Simultaneous Multi-Threading is the AMD version of Intel's HyperThreading



▲ **Extended Frequency Range can squeeze an extra 100MHz performance boost**

One of the other key changes to the CPU is improved branch prediction and pre-fetch, covered by the 'Neural Net Prediction' and 'Smart Prefetch' technologies. This basically allows the CPU to predict the future, and keep instructions that it thinks are going to be used on a regular basis in the cache, ready to roll straight away. This is hugely important when it comes to ensuring the CPU is being used most efficiently, as most applications repeat instructions regularly – by not having to reload them into the caches, the CPU can dramatically improve its overall performance.

One last thing to note – none of the Ryzen CPUs comes with an integrated GPU. If you're going Ryzen, you're going discrete, though we can expect to see the Zen cores in an upcoming AMD CPU later this year that will include an iGPU.



> This basically allows the CPU to predict the future, and keep instructions that it thinks are going to be used in the cache

CHIPSETS

Along with the new CPUs and AM4 Socket, AMD is launching three new chipsets with the initial R7 launch. The high-end is the X370, and it includes twin USB 3.1 Gen 1, six USB 3.1 Gen 1 and six USB Gen 2.0 ports, along with four SATA 3 6Gbps connections. It also has twin SATAe drive ports, which can be used as another four SATA 3 6Gbps ports. There's another eight lanes of PCIe Gen 2.0, while the most commonly used RAID 0, 1 and 10 modes are supported. It comes with twin PCIe slots for CrossFire/SLI setups, and fully supports multiplier overclocking.

Next down the line is the B350; basically it's the same but has fewer SUB ports, only six PCIe 2.0 slots, and a single CPU to GPU PCIe lane. The good news is that this mainstream chipset still supports overclocking. The runt of the litter is the A320; this lowers the overall number of USB ports even more, drops the number of PCIe 2.0 lanes to four, has a single CPU to GPU PCIe lane, and most importantly, ditches overclocking support.

All boards now support M.2 NVMe drives, and the official memory speed is 2666MHz, though this varies based on amount, number of sticks and whether it's dual or single rank:

- **Dual Channel/Dual Rank/4 DIMM: 1866MHz**
- **Dual Channel/Single Rank/4 DIMM: 2133MHz**
- **Dual Channel/Dual Rank/2 DIMM: 2400MHz**
- **Dual Channel/Single Rank/2 DIMM: 2667MHz**

We have to say that memory support for these chipset is… lacking to say the least. It was the number one problem with testing. We used the Corsair Vengeance CMK16GX4M2B830000C15 DDR4-3000MHz kit that came with our test platform, and had many, many issues getting this to run at the default speed of 2666MHz. Every single board defaulted to 2133MHz, and after manually changing this to 2666MHz via the BIOS, half the boards wouldn't boot, requiring massaging of the memory timings to get each board working. It's an area that AMD really needs to improve upon urgently, as it's the #1 issue with the platform at the moment.

There's also one other issue – PCIe lane support. An R7 1800X paired with the X370 chipset only has 24 PCIe lanes, which almost half that of the 40 offered by the competing Intel platform. This means less support for multiple SSDs, graphics cards, USB ports and other peripherals. AMD explained that this is because these chipsets are designed for the mainstream products due later in the year, and thus need to be affordable.

WORKSTATION AMAZING, NOT SO GREAT FOR GAMING.

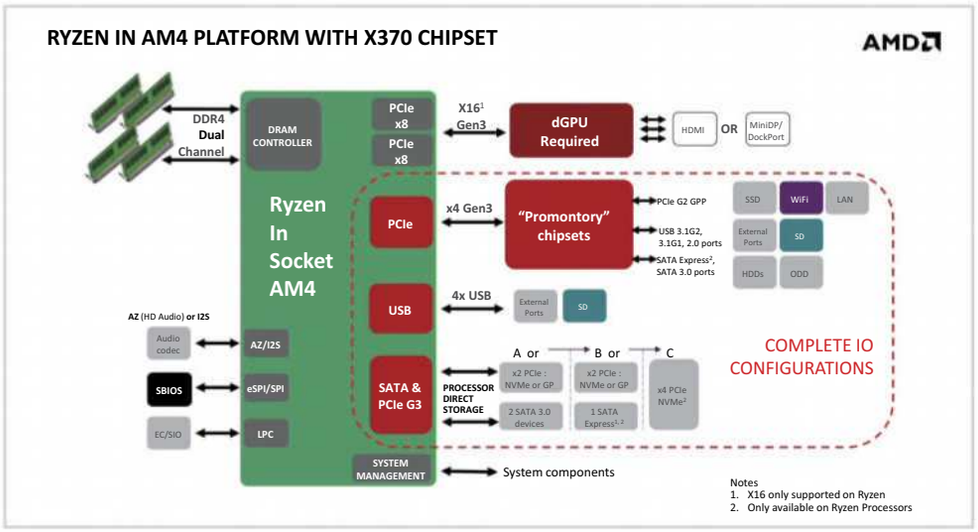
We compared the R7 1800X against Intel's i7-6950X, as we couldn't obtain an i7-6900K. However, we were able

to disable two of its ten cores, to put it on a more even path with the 1800X, though the Intel chip still has slightly more cache, at 20MB of L3 cache. We also compared it against the current king of gaming chips, Intel's i7-7700K. We should point out that the 7700K uses Intel's latest Kaby Lake architecture, while the 6950X and 6900K both use the two year old Broadwell E architecture; Kaby Lake is known to have better IPC performance.

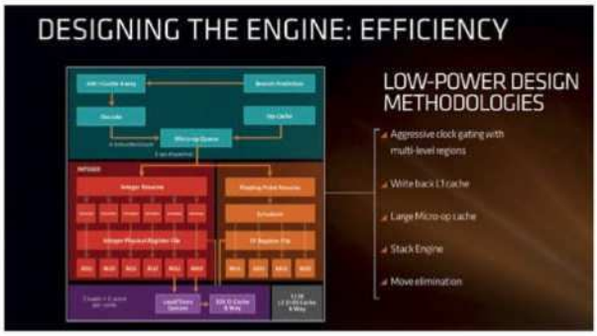
When it came to the single-threaded Cinebench R15 test, we can see that the 1800X has caught up to Intel's $1500 CPU. Not bad for half the price. It's even faster when all eight cores are in action. In fact, in every benchmark that utilises all eight cores – Handbrake, POV-Ray, and SiSoft Arithmetic – the 1800X beats the 6900K, and kicks the arse of the i7-7700k. This is fantastic news for content creators such as 3D artists, CAD users, video editors and any other power user who utilises software designed for 8-cores/16-threads. This is amazing considering AMD's platform (CPU plus motherboard can cost as little as $700, versus

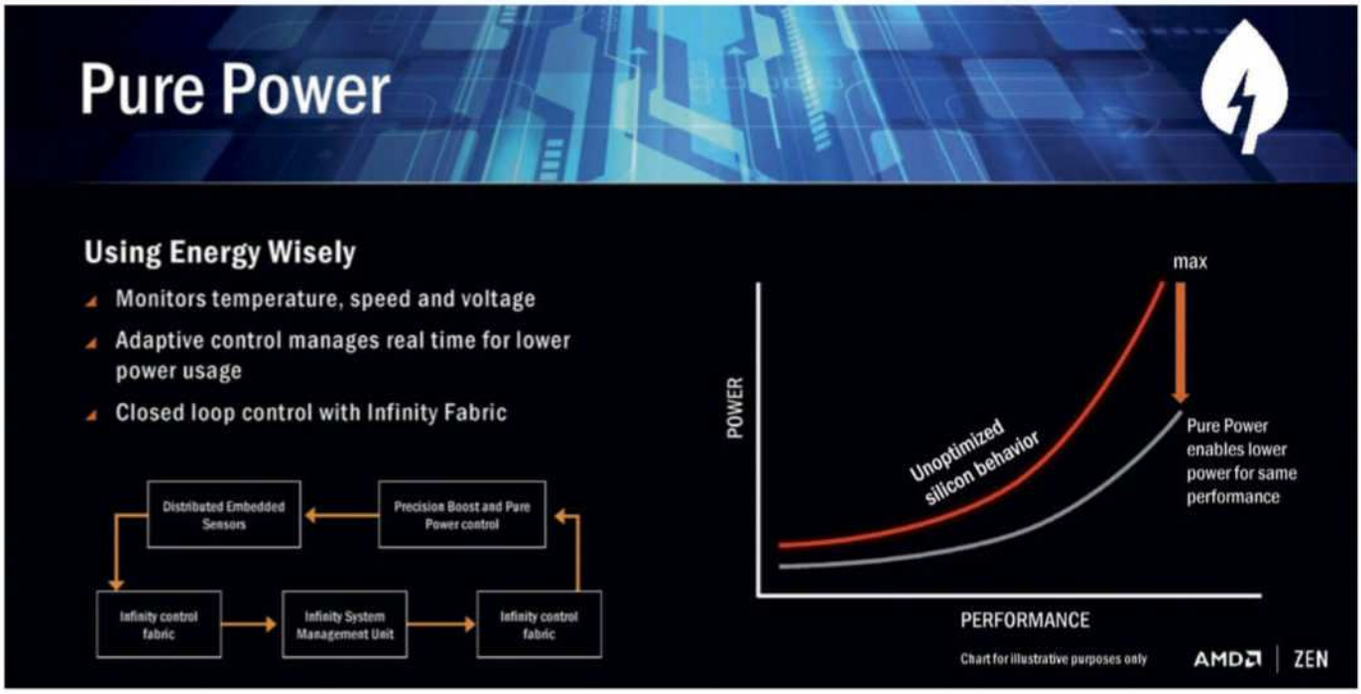
Unfortunately the story for gaming isn't quite as rosy. The vast majority of games on the market today use just four cores, and our benchmarks show that the Zen architecture hasn't caught up to the Kaby Lake design in the 7700k. We ran all of our gaming benchmarks at low resolution to ensure the GPU wasn't a bottleneck, and the 1800X was beaten by the 7700K in every test, and by a relatively large margin. There's two key reasons for this. Firstly, the 7700K has higher IPC performance, of approximately 22% according to our Cinebench R15 single-threaded test. Secondly, the 7700K also has a frequency improvement of 10%, as it has a max Turbo speed of 4.5GHz.

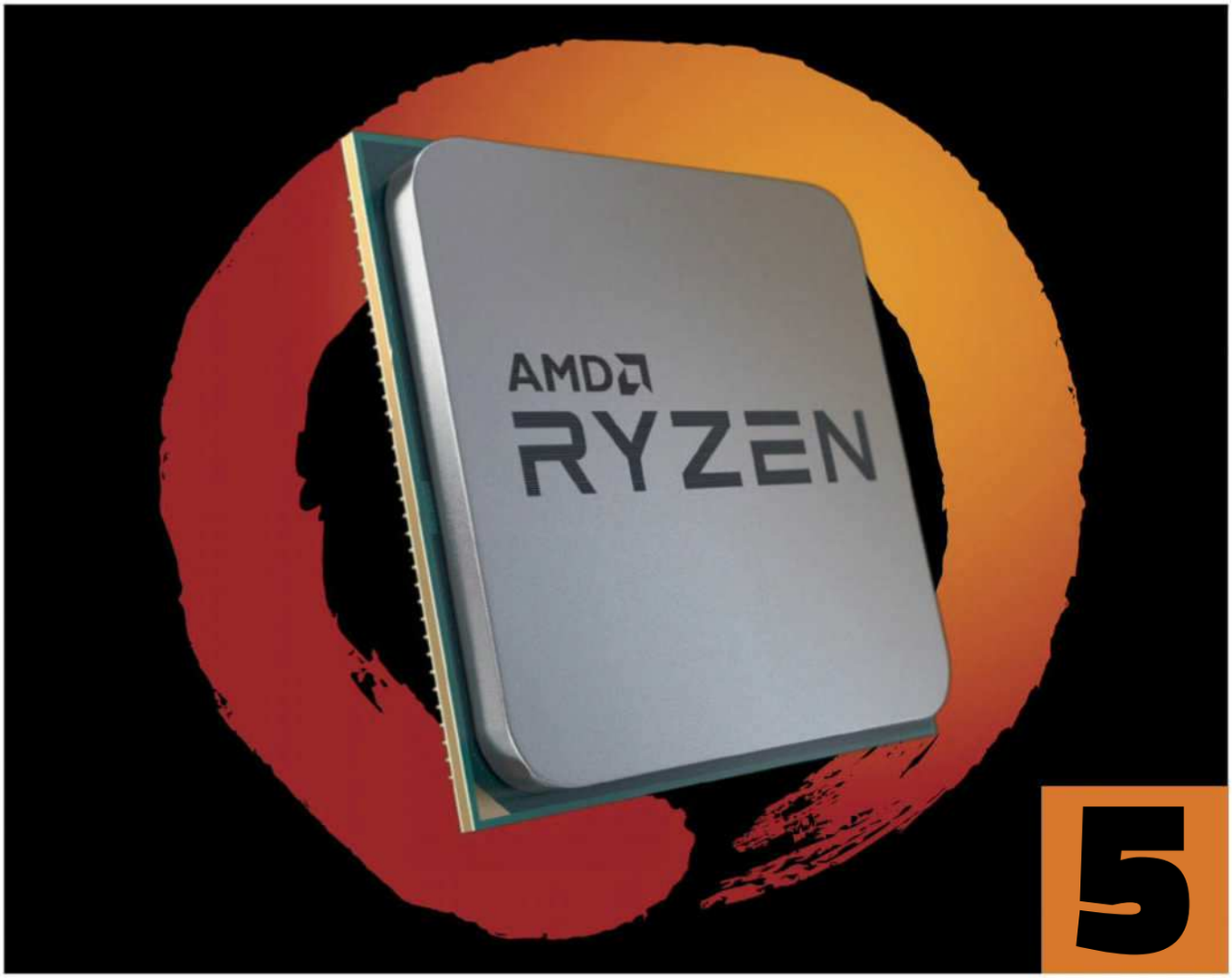
So then, the Ryzen 7 isn't quite the gaming demon we were expecting, but it certainly smashes Intel's competing workstation solutions, which can only be a good thing. Delivering better performance than the i7-6900K at half the price, it's a big win for AMD. And even though the gaming performance isn't amazing, it's still a nice leap up from prior AMD designs, which should light a fire under Intel to lift its game. Where things will get really interesting for gamers is the Ryzen 5, which is a quad-core CPU, and thus much more relevant for gaming. PC



▲Ryzen 7 is a step up for AMD but not quite the gaming demon we hoped for







TEAM RED CPU

AMD Ryzen 5

Are six cores enough to recommend the R5?

As mentioned earlier, just as we'd finished our testing and writing of the Ryzen 7 coverage, we received an invite from AMD to head to Beijing for the official Ryzen 5 launch. This would allow us to test and write about the mid-range chips in just three days before the beloved binding of paper you're now holding would be churned out at the printers. It's a shame we couldn't have had the Ryzen 5, prior to the Ryzen 7, as it's arguably a better chip for PC gamers.

As you well know, the vast majority of games still only make use of four cores, so the larger number of cores found in the Ryzen 7 don't tend to offer up noticeable gaming performance improvements unless you're also streaming, recording or doing other stuff in the background. Hence why Ryzen 5 is more relevant to us lot – with either four or six cores, it's a better fit for basic gaming. Let's see which chips make up the Ryzen 5 product stack, and how they differ from the Ryzen 7.

RYZEN 5 IS COMPRISED OF 4

There are four chips that fall under the Ryzen 5 banner. At the top of the heap is the Ryzen 5 1600X, which will retail in Australia for $359. This puts it basically in competition with Intel's i7-7700, which retails for just $40 more. It's a six-cored part, and uses two of the CCX units found in the Ryzen 7 series – in fact, all of the Ryzen 5 chips do. However, in the 1600X, each CCX has a single core disabled. It still has 16MB of L3 cache, and 512k L2 cache per core. The Base speed is 3.6GHz, while the Boost speed is 4GHz – however, only two of the cores will boost to this speed. Under the right thermal conditions, its XFR support means you can squeeze a free 100MHz out of it, lifting the speed to 4.1GHz. Overall TDP is 95W.

Next up we have the Ryzen 5 1600, which will retail for just $319, putting it on par with Intel's Core i5 7600K. This is basically identical to the 1600X with a couple of minor differences; firstly the base speed drops to 3.2GHz, while the Boost speed drops to 3.6GHz. There's also no XFR support. As a result of the frequency drop, the TDP is lowered to 65W. Like all Ryzen chips it's fully multiplier unlocked though, so hitting speeds of 4GHz shouldn't be an issue.

The last two chips in the line-up drop the total core count to four cores each, yet they both still use two CCX units – it's just that

two of the four cores in each have been disabled. The first is the Ryzen 5 1500X, which still has Simultaneous Multi-Threading, enabling a total of eight threads to be run concurrently. At a cost of just $275 it's up against Intel's Core i5 7600. It still has the 16MB of L3 cache of the other chips, but the Base frequency drops to 3.5GHz while Boost drops to 3.7GHz. However, the XFR on this chip is faster than every other Ryzen, with a potential maximum increase of 2GHz. That means this $275 CPU could hit 3.9GHz in the right conditions, making it a potent contender for best value chip in the range.

Finally we have the Ryzen 5 1400, which will retail for a mere $245, around the same price as Intel's i5 7500. The major change here is a halving of the L3 cache, down to just 8MB, as well as frequency drops. The Base drops to 3.2GHz while the Boost is just 3.4GHz, so it's not going to be much of a contender when compared to the quad-cored 3.8GHz i5 7500 in gaming. However, it does have SMT, so can run a full eight threads, unlike Intel's competitor.

And there you have it – architecturally, they're all identical to the Ryzen 7 CPUs in that they use the Zen core at their heart. It's just that they've been de-cored, and had their frequencies altered. Everything else remains the same. So just how do they perform?

SIX-CORES ARE BETTER THAN FOUR

We tested our Ryzen 5 1600X against Intel's i7-7700K. Even though Intel's chip is $100 more expensive, it performs identically to the i7-7700, which is priced at just $40 more than the 1600X; it's just not overclockable. We tested using the ASRock Fatal1ty AB350 Gaming K4 motherboard with BIOS 2.20, along with 2 x 8GB of the same Corsair memory used in the Ryzen 7 testing. As with the Ryzen 7, memory setup was a pain in the ass, even more so. Simply changing memory timings didn't work – we had to enable the XMP setting, then manually adjust the memory speed to the Ryzen 5's default of 2666MHz.

As our productivity and synthetic benchmarks show, the majority of which will eat as many cores as possible, the 1600X exceeded the performance of Intel's chip. This is great news for those who want a cheap desktop for multi-threaded applications or multitasking. However, we wanted to dig deeper with gaming performance with this chip, and the results weren't stellar. Unlike most reviewers, we test at low resolution and with GPU-intensive features disabled, so that it's the CPU that is carrying the load. This is done so that we can test the CPU in isolation, so that in times in a game when the CPU becomes the limiting factor, you can see what kind of performance difference to expect between the competing products. As you can see, the R5 1600X came last in every test bar one, and not by a small margin in most of them. At times it was half the speed of the Intel chip, and even in the best case scenario it was around 15% slower. This was seriously slower than we expected, so re-ran every benchmark multiple times, and triple checked our driver and system setup.

> "As AMD works with game makers, it's starting to see palpable performance increases"

There is hope on the horizon though. As AMD works with game makers, it's starting to see palpable performance increases as devs learn how to use those extra cores. A recent patch to Ashes of the Singularity saw a 31% performance increase, which would put the Ryzen 5 series in serious contention with Intel's competing quad-core products. However, as it stands, there seems to be something that's stopping the Ryzen 5's increased IPC from really showing up in gaming tests. There's no denying that the Ryzen family in general is a monster when it comes to multi-threaded applications, but there's still a long way to go when it comes to gaming performance. PC

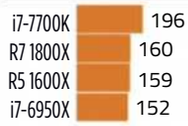
Scenes from the Ryzen launch in Beijing

Ryzen R5 1600X Benchmarks

Min FPS Avg FPS Score **Note**: i7 6950X had two cores disabled, down from ten to eight, to replicate the 6900K

Cinebench R15 Single Thread

HIGHER IS BETTER

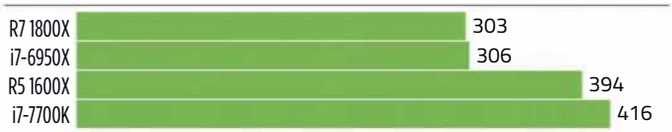


Cinebench R15 MULTIThread

HIGHER IS BETTER

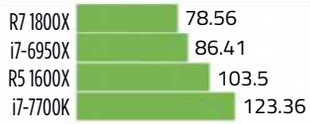
HandBrake nightly build: 1.1GB 4K Video to Matroska H.265 MKV 720p30

SCORE TIME (SECONDS - LOWER IS BETTER)



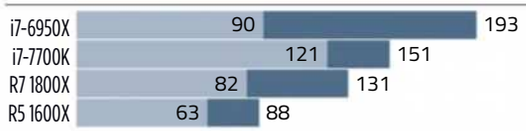
POV-RAY: Benchmark scene

ELAPSED TIME (SECONDS) - LOWER IS BETTER



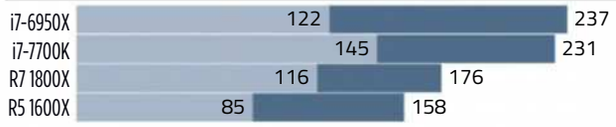
GRID AUTOSPORT

800 X 600, ULTRA DETAIL - HIGHER IS BETTER



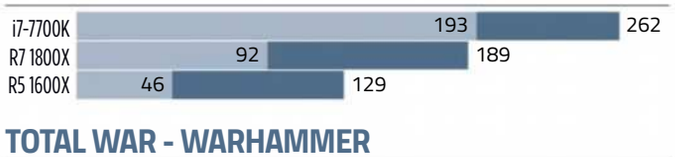
SHADOW OF MORDOR

640 X 360, ULTRA DETAIL - HIGHER IS BETTER



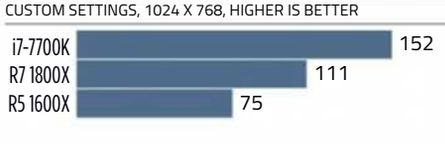
FOR HONOR

EPIC DETAIL, 1024 X 768, OVERALL, HIGHER IS BETTER



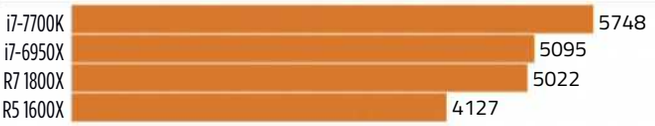
TOTAL WAR - WARHAMMER

CUSTOM SETTINGS, 1024 X 768, HIGHER IS BETTER



PCMark 8 Home Open CL Accelerated

HIGHER IS BETTER

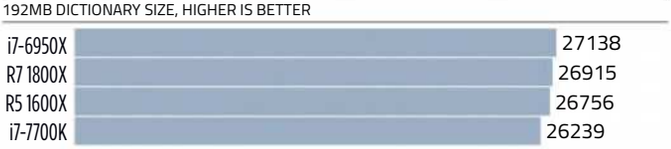


PCMark 8 Home Non-accelerated Conventional

HIGHER IS BETTER

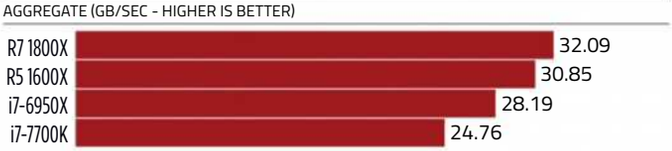
7-Zip Multithreaded file compression

192MB DICTIONARY SIZE, HIGHER IS BETTER



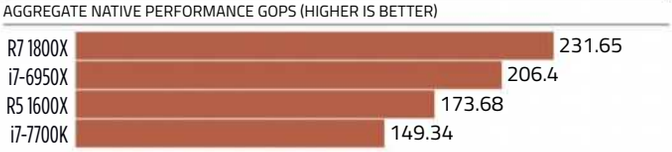
SiSoft Sandra: Memory Bandwidth

AGGREGATE (GB/SEC - HIGHER IS BETTER)



SiSoft Sandra: Processor Arithmetic

AGGREGATE NATIVE PERFORMANCE GOPS (HIGHER IS BETTER)

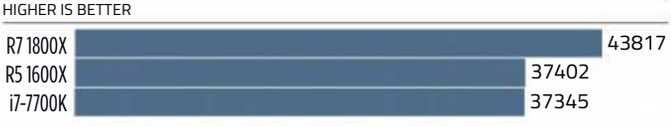


SiSoft Sandra: Processor Multimedia

AGGREGATE MULTI-MEDIA NATIVE PERFORMANCE (MPIX/S - HIGHER IS BETTER)

3DMARK Cloud Gate

HIGHER IS BETTER



3DMARK Fire Strike

CUSTOM SETTINGS, 1024 X 768, HIGHER IS BETTER

AMD Interview

During the Beijing launch event, we were lucky enough to spend some time chatting with **Travis Kirsch**, who is the of Director Client Product Management on the Ryzen series at AMD.

PCPP: How are the CCX modules arranged in the Ryzen 5 chips?

Travis: It's a symmetric design. We have the same number of cores per CCX module in all Ryzen variants. With the six-core R5 1600X and R5 1600, we simply have two CCX modules, and disable a core on each of these.

What about the quad-core R5 1500X and R5 1400? Are you disabling an entire CCX unit?

We're using two CCX units, but disabling two cores per unit. That maximises the L3 cache.

So on that note, what are the cache amounts for the Ryzen 5 units?

For the six-core, it has 512Kb L2, so you get 3MB L2, then you get 16MB of L3. The highest four-core also has 16MB of L3 cache, while the R5 1500 has 8MB.

In that case, I'm guessing the transistors are identical, it's just that they're not all active?

That's correct.

Given the lower thermal output of the Ryzen 5 chips as there are less cores active, are you seeing better overclocking results than the Ryzen 7 series, which tends to max out at around 4.1GHz?

Yeah, we're seeing a little bit better. It depends on the cooling solution obviously; we're not getting significantly higher, more like in the order of a hundred or two hundred MHz.

So which Intel models are you anticipating will go head to head against the new Ryzen 5 chips?

The R5 1600X would be matched against the 7600K, and then the R5 1600 would go up against the i7-7600. The R5 1500X will go up against the 7500, and then the R5 1400 would go up against the 7400.

During the XFR demo in Cinebech, you showed the 200MHz boost but this only works during the single threaded test. Can you explain why that is? Is it possible to hit that 200MHz boost with all four cores active?

No, we can do up to two cores with a 200MHz boost using XFR. There are a couple of things we've done with that part because of the market we're going into. The first one is we put a 95W cooler with the 65W part, it's a super quiet cooler. We've spent 2.5 years developing this so we can give more value to the customer.

On that note, will the new Ryzen 5 all be coming with coolers?

All but the R5 1600X. This doesn't come with a cooler, but the rest all have a version of the Wraith cooler. The 1600 comes with a Wraith Spire, the 1500X comes with a Wraith Spire and the 1400 comes with a Wraith Stealth, which is a 65W cooler.

When we first saw the Ryzen 7 released, you guys showed a shitload of benchmarks comparing it to Intel's comparable chip. However, with the Ryzen 5 launch, we didn't see a single comparative Intel benchmark, which seemed a little odd. Why was this?

It's illegal in China. It's illegal to show comparative benchmarks in China. We're not trying to hide anything, just given the venue we couldn't do it. We'd love to show you benchmarks.

So how do you think the R5 1600X compares against Intel's 7600K?

What we see with our competitors is that when they drop down from eight threads to four threads, they lose a lot of performance. If you look at that 1600X part, a lot of the specs are the same as the 1800X minus the two cores. So we're still delivering 12 threads at very high frequencies, so that part is going to run very similar to an 1800X as far as gameplay goes, but the competition loses a lot when going from eight threads to four. There's a lot of concern about 1080p gaming coming out of the community and we learned a lot about that. There's a lot of things we can do with game developers to improve this experience. But the gap that you see between the 1800X and those eight core competition components, really goes away when you go to a four-core part. I guess what I'm getting at is that the 1600X will be much more competitive in those scenarios to a 7600K.

The extra cores combined with the amazing price makes the Ryzen 7 series a really compelling product versus Intel's competition. What is it about the Ryzen 5 that you think will make them compelling versus Intel's quad-core chips?

There's two things. One is we'll have double the thread count, which is always good. We like to look at those four-core, eight thread parts as having basically the specs of an i7 but we're giving it at a price point under US$200. So one is the main value proposition. The single thread performance gap between the i5 is going to be much much closer, secondly the entire stack is multiplier unlocked. If you want to overclock an i5, you have to buy the K version and a Z-series motherboard. With us, you can do it with our lowest end Ryzen 5 1400 and a B350 motherboard. We're trying to stretch that enthusiast mentality out to more of the market, because we want desktops to be fun.

You hinted briefly today at Zen 2 and Zen 3, with one slide that mentioned them. Is there any additional info you can provide on these – will the improvements be focused on frequency increases? Or architectural changes?

I can't talk to the future roadmap, sorry.

Anything else you'd like to add?

I'm excited. I think it's really important for to understand what we're trying to do. We feel like the CPU ecosystem has been beat down for a really long time, and boring as hell, nothing to write about. This entire ecosystem needs competition, and needs to make the market fun again. That's our goal. Our team has been working on this stuff for four or five years, and that's our goal, is to make it fun, and to give people to have a livelihood in the ecosystem.

When you're talking to your partners, such as motherboard manufacturers, can you sense a palpable change in the air and excitement?

I can just say that product pitches are a lot easier now (laughs). But you can tell that we're not just helping ourselves, we're helping them too. There's a mutual feeling of confidence that is growing. PC

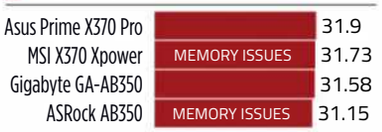
AM4 Motherboard Roundup Results pt.1

CINEBENCH Multithreaded

SCORE - BIGGER IS BETTER

SiSoft Sandra: Memory Bandwidth

AGGREGATE (GB/SEC - HIGHER IS BETTER)



MOBO

ASRock Fatal1ty AB350 Gaming K4

Outstanding value for money

PRICE $159
www.asrock.com

This board is the perfect example of what an incredible value proposition Ryzen can be. Chuck this together with a $469 R7 1700, overclock it to R7 1800X levels, and you've got a $628 platform that will outperform an Intel-based system that will set you back at least $1800. AMD has always been known for outstanding value, but this is an entirely new realm of price versus performance.

ASRock has used the mid-range B350 chipset in this board, so there are obviously fewer features than the higher end X370 models, yet not dramatically so. In terms of basic PCIe physical lanes, we have the main full-length lane for your graphics card, which is steel-reinforced. However, surprisingly there's also a second full-length lane, but this only runs at x4 speed, so there'll be no SLI support. Another four single-length PCIe 2.0 lanes are included on the board for your smaller peripherals.

Compared to many $350+ boards, the number of graphics outputs on the board is a pleasant inclusion. There's HDMI, DVI-D and D-sub; most expensive boards have just a single output. As well as the four SATA 3 6Gbps connectors, ASRock has added an ASMedia chip to deliver two more. There are even twin M.2 sockets, though only one supports the fastest speed of PCIe 3.0 x4, while the second is limited to SATA 3 6Gbps M.2 drives. Due to the lack of PCIe lanes on this chipset, you'll need to check carefully which ports are disabled when others are in use. For example, using the first M.2 socket knocks out the fourth PCIe x1 lane.

There's a healthy range of USB ports on the rear I/O panel, with eight in total. Three are ye olde USB 2.0, while the other five are USB 3.0, one of which is Type C. Unfortunately there's no sign of USB 3.1 though. Three more USB ports are supported provided you use USB headers.

Audio support is rather rudimentary, using the older ALC892 audio codec, which is vastly inferior to the newish ALC1220 seen on more expensive boards. ASRock has spiced this up a little with some very basic additions, but it's nothing like the on-board solutions found in the higher price ranges. The BIOS isn't anything to write home about, and it took a chat with ASRock before we could get the memory to run at 2666MHz; enabling the 'XMP' mode actually lowered the overall memory bandwidth!

> AMD has always been known for outstanding value, but this is an entirely new realm of price versus performance

Fan support is also very basic, with a mere four fan headers. Ethernet is taken care of courtesy of a Realtek Ethernet port, while the old-fashioned PS/2 mouse and keyboard ports are rather quaint. Despite this being a very basic board, it's hard to ignore that ridiculously low price point. Considering it will support AMD processors up to the year 2020, which is the lifespan AMD expects for AM4, this is a bargain-basement priced way to upgrade to the new Ryzen platform. *BENNETT RING*

- Incredible value
- No loss in performance
- Decent BIOS

- Very basic audio solution
- Lack of fan headers

VERDICT:

It doesn't get much cheaper than this, yet ASRock has ticked all of the major boxes that it needed to. The perfect entry-level board.

8

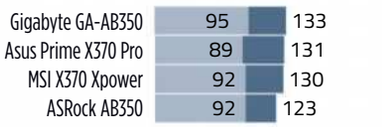
AM4 Motherboard Roundup Results pt.2

3DMARK Fire Strike

SCORE

Grid Autosport

Min FPS Avg FPS
800 X 600, ULTRA DETAIL - HIGHER IS BETTER



PC PowerPlay SMART BUY

MOBO

Asus Prime X370-Pro

Looks to die for that won't kill your wallet

PRICE $239
www.asus.com.au

We have to hand it to Asus – they've designed a very aesthetically attractive board considering the price of just $239. Even better, they've managed to squeeze in the most expensive X370 chipset into a board at this price, which is simply astonishing value. Let's dig deeper to see how they've managed to do so.

Like many of Asus' recent boards, it features the 5-way optimisation technique, allowing a single click that will optimise fan speeds according to various temperature sensors on the board, while also optimising the speed and voltages of the CPU. Basically it's an automatic overclocker, with additional features. There's also support for Asus' Aura lighting system, allowing you to synch the board's RGB lighting with various other Asus devices' RGB lights.

As with all X370 boards, there are only four memory slots, and Asus rates these up to 3200MHz. In terms of physical layout, there's the usual twin PCIe full length boards, which can both be run at up to x8 speeds, delivering SLI if you want it. Another full length slot running at x4 resides at the bottom, with three more x1 physical slots in between these.

Asus has beefed up the SATA support, with four standard SATA 3 6Gbps ports, along with another twin SATAe that can be converted to four more SATA 3 6 Gpbs. There's only a single M.2 connector, but at least it operates at maximum effort, using four lanes of PCIe 3.0.

At this price, we didn't expect much in the way of audio, but Asus has included its unique take on the ALC1220 chipset, which it tweaked with Realtek to deliver better audio quality. The new chip is called the S1220A, and is theoretically capable of hitting an SnR of 120dB on the stereo line out, and 113 dB SnR on the front line in. It's also got the usual high-end caps, EMF shielding and the like that we'd see on more expensive boards.

Intel has been tasked with delivering the Ethernet solution, using the I211-AT chipset. There's a decent range of I/O options on the rear plate, with eight USB ports in total; six USB 3.0 and twin USB 3.1, one of which is obviously Type-C. Additional USB ports can be added, and there's a single USB 3.1 header for a front connector.

We loved the BIOS of this board, as it's clean and responsive. Even better, dropping the memory in and setting it to 2666MHz simply worked, with none of the fiddling around required on the ASRock or MSI. Performance across all of our tests was excellent, coming towards the top of the pack.

> We loved the BIOS of this board, as it's clean and responsive

We're very surprised at what Asus has delivered at this price point. To be frank, it's almost a competitor for the company's own Crosshair VI Hero, though we're guessing it doesn't overclock as well. Still, at this price point, this is one of the most feature-packed boards around. *BENNETT RING*

- Excellent audio
- Looks great
- DP and HDMI out

- Only one M.2 slot
- Power heatsinks are more show than anything else

VERDICT:

This is arguably the best value board on the market, in terms of balancing out a very attractive price with an excellent feature set.

9

PC PowerPlay SMART BUY

AM4 Motherboard Roundup Results pt.3

Shadow of Mordor

Min FPS Avg FPS
640 X 360, ULTRA DETAIL - HIGHER IS BETTER

	Min FPS	Avg FPS
Gigabyte GA-AB350	112	181
Asus Prime X370 Pro	114	181
MSI X370 Xpower	113	177
ASRock AB350	99	163

RYZEN MASTER ENABLED ON ASROCK X370 GAMING K4- SHADOW OF MORDOR, 640 X 360, ULTRA DETAIL, HIGHER IS BETTER

ASRock AB350	82	114

MOBO

Gigabyte GA-AB350-Gaming 3

Turn on the bright lights

PRICE $179
www.gigabyte.com.au

Ok, ok, we get it – RGB lighting is important to a certain sector of the market. But when Gigabyte's boldest claim about this product is that it has the most advanced lighting controls in the world, we have to wonder where else we're going to see something a little more innovative than shiny lights. Over 30% of the information about this product focused on the ability to attach RGB light strips (most boards support this), change their flashing/pulsing mode (most boards support this) and software support to fully customise each lighting zone. Snooze much?

Thankfully the rest of the board is a little more exciting. Based on the more affordable B350 chipset means Ggiabyte has been able to keep the price down, yet there's still a few little goodies that we appreciate. There's only one full-sized PCIe lane that can handle x16 or x8 speeds, with the other two limited to x4, limiting this to CrossFire only. There are only two PCIe x1 slots.

Six fan headers can handle either PWM or Voltage fans automatically, and two of these can even take care of 24W water pumps. Gigabyte's Smart Fan 5 software allows for custom fan curves. It's not the easiest to use but it does integrate with onboard motherboard sensors to allow cooling of specific hot-spots.

Unlike the ASRock board which is a mere $20 cheaper, Gigabyte has gone for the far superior ALC1220 audio codec. The headphone amp can also automatically detect the impedance required by your gaming cans. There's also a single M.2 connector, running at full PCIe 3.0 x4 speed. Six SATA 3 6Gbps connections is rather good for this price point, identical to the ASRock, but using the M.2 slot will knock out some of these.

The USB configuration is pretty standard, but Gigabyte employs a technology called Voltage compensation. Basically this boosts the USB voltage based on cord length, which is becoming increasingly important with VR kits. We've encountered several PCs that simply wouldn't play with devices with long USB cords, such as the Oculus Rift sensors. It also includes USB 3.1 Gen 2, for the full 10Gb/sec, whereas the cheaper boards in this roundup stick with USB 3.0.

The BIOS was also one of the best of the bunch, not surprising given how closely Gigabyte works with some of the world's best overclockers. Having said that, we did encounter memory issues with this board, but the easy layout of the BIOS meant it didn't take too long to figure out where the memory timing settings were, unlike the bizarre location of the ASRock's memory timing. The final nice touch is Gigabyte's G-connector; rather than plug your reset, power and HD led cables into tiny pins, they connect to a large plug, which then plugs into the board.

> "the affordable B350 chipset means Gigabyte has been able to keep the price down"

We're hard pressed to pick between this and the Asus board, though the superior audio of the Asus and lack of memory issues means we're going to have to give the nod to Asus in this case.
BENNETT RING PC

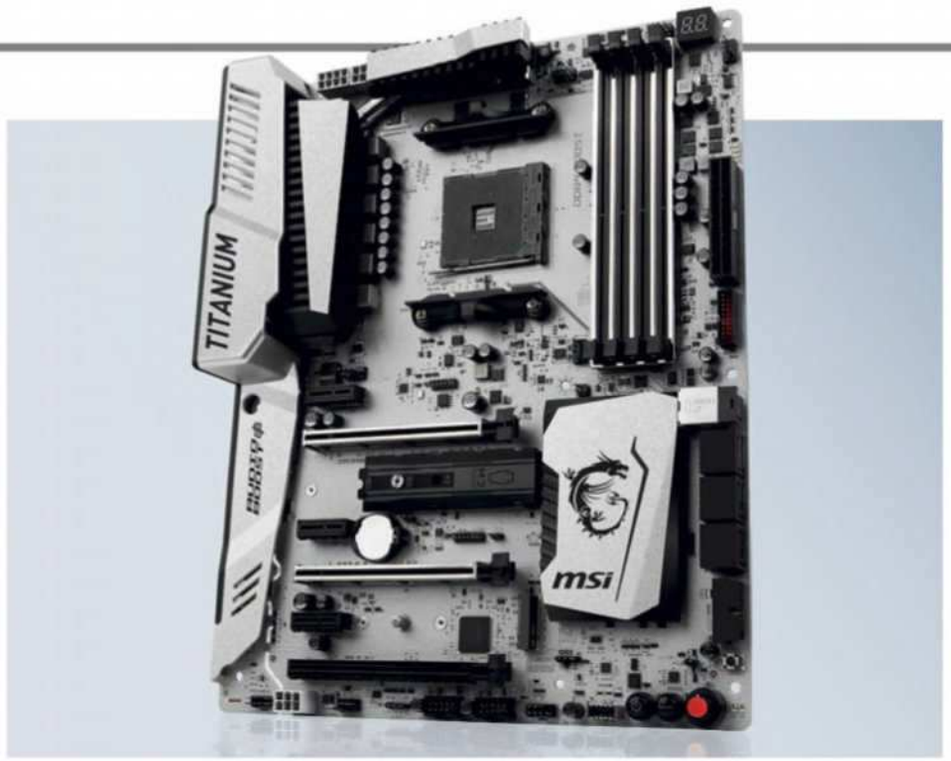
- Quality audio
- Crazy lighting
- USB voltage boosting

- Memory issues
- Overall lags behind the Asus

VERDICT:

It's a very close call between this and the Asus board, but ultimately we're going to have to give the thumbs up to Asus for its ease of setup and better audio quality.

8



AM4 Motherboard Roundup Results pt.4

Ghost Recon WildFire

Min FPS Avg FPS
1280 X 720, MIXED SETTINGS TO MAXIMISE DRAW CALLS/POLYGONS, YET LIMIT SHADERS AND GPU BOTTLENECKS

	Min FPS	Avg FPS
Gigabyte GA-AB350	76	96
Asus Prime X370 Pro	78	95
MSI X370 Xpower	75	94
ASRock AB350	75	93

MOBO

MSI X370 Xpower Gaming Titanium

Tweakers need only apply

PRICE $469
www.msi.com

At the time we sent out our invite to this roundup, we also sent out a similar invite from our sister magazine, PC and Tech Authority. MSI was unfortunately only able to send one board to cover both magazines, and it just happened to be the most expensive of the lot. This fact alone is going to make it hard to recommend. There's also the fact that this board really doesn't offer a lot that gamers will find to be must-have features; instead it has a very specific audience in mind.

There's no denying what a damn sexy piece of work this thing is, with its shiny silver finish helping it stand out from the crowd. But when we take a look at the feature-set that ordinary users require, it comes up rather lacking.

Being an X370-based board it's got the usual twin full-length PCIe 3.0 x8 lanes, along with a single full-length PCIe 2.0 x4 slot. Snuck in between these are three small x1 PCIe lanes, as well as twin M.2 slots. Only one of these comes with MSI's 'M.2 Shield', a small slab of metal that covers the drive and is meant to stop SSDs from throttling down when they overheat. A single U.2 connector is also included, but it's not possible to use all three at once.

There are only six SATA 3 6Gbps ports, two fewer than the $239 Asus board. USB connectivity is par for the course, with nine in total on the rear I/O panel. An ASMedia chip delivers two USB 3.1 Gen 2 ports, one of which is Type-C, while the X370 chipset delivers an additional three USB 2.0 and four USB 3.1 Gen ports. There are headers for another handful of USB headers. A single Intel I211AT Ethernet controller provides network connectivity, while the ALC1220 audio codec handles sound. So far, so meh, but it's the overclocking features that make this board so pricey.

For starters, there's the usual on-board buttons that make this easy to use in a test-bench environment – power, reset, clear CMOS, flash-back BIOS. There's also a rotating dial for overclocking noobs, that provides up to five levels of overclocking. Given the R7 1800X's rather lacklustre overclocking though, we doubt you'll make it past the first notch without sending the machine into the depths of Blue-screen, infinite-loop reboot hell. Six fan coolers and beefy heating will allow for extra cooling when extracting the most out of your chip. Interestingly MSI claims this board has "100% compatibility" on the website when referring to memory; could have fooled us, as this was one of the boards that required memory timing tweaks to operate properly. There's also high-end power phase design, including a fully digital PWM, a PCB design optimised for overclocking and a slow mode for booting into Windows while the system is teetering on the edge of instability.

> "this board doesn't offer a lot that gamers will find to be must-have features"

Yet for the vast majority of users, these features will go untouched. It's fantastic if you want to set world records, but a normal user will still be able to hit 4GHz on an R7 1700 using a $160 board instead. As a result we'd suggest leaving this board to the overclocking pros. *BENNETT RING*

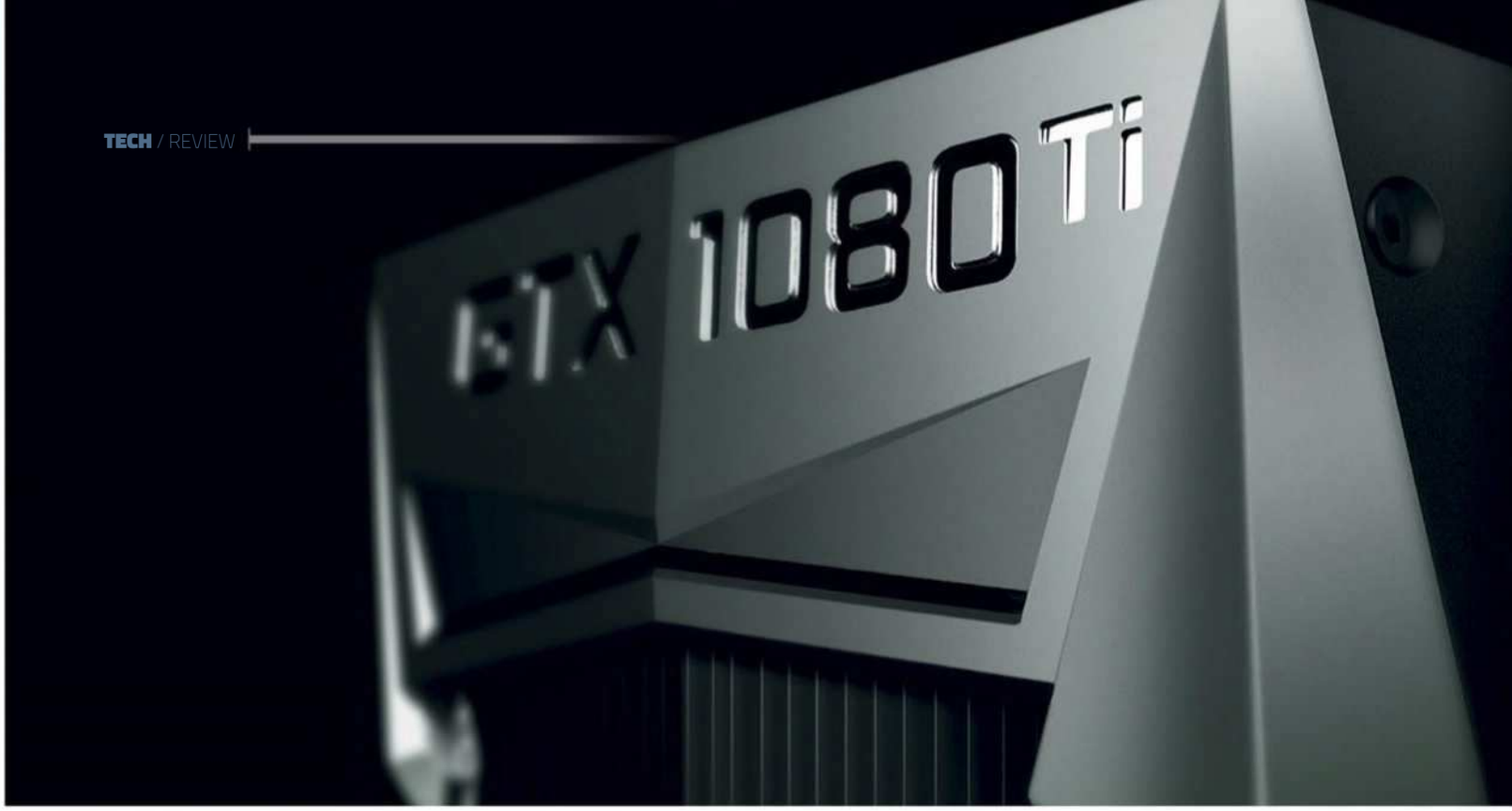
- Stacked with overclocking features
- Looks sexy
- Quality construction

- Most features are use-less for average users
- Lacks the features of boards half the price

VERDICT:

If you're a serious tweaker, this board probably has you all hot and bothered. For the rest of us, you're much better off saving your cash for an SSD or GPU upgrade.

7



GPU

Nvidia Geforce 1080 Ti

The biggest performance jump for a Ti card ever

PRICE $XXX
www.nvidia.com

It's been almost a year since Nvidia's Pascal GPU was launched, and in that time there have been several iterations, from the top-end discrete GTX 1080 and GTX 1070, mid and budget range GTX 1050 and 1060 – along with a tweaked 1050 TI. In the mobile space Pascal has been a raging success as it offers the same performance in a mobile GPU as you get in the desktop card, and that's been used by gaming laptop manufacturers to produce truly exciting products that leverage its power, mostly in the form of very high resolution (up to and including 4k) screens, and/or very high refresh rate screens.

The king of the Pascal pack was the Titan X, which has the full suite of processing units onboard (see table), and sold for a hefty premium over the standard Ti. Now, for the second time in a row, people who bought a Titan have seen the Ti version equal or exceed Titan performance at a far lower price. All because this particular Ti card is an absolute ripsnorter, delivering the biggest jump in performance over a standard GPU that Nvidia has ever achieved. Nvidia claim approximately 35% greater performance for the new GTX 1080 Ti over the regular 1080, and our testing bears that out.

This means different things to different people. For gamers it's a card that can smoothly drive gaming on a 4k monitor, and for computer applications the 1080 Ti represents far better value than the Titan X, which costs hundreds of dollars more, and can't match it for processing power.

It gets there by two means. First, the Pascal GPU used in the 1080 Ti (which is designated GP102-350-A1) is near enough identical to the Titan X's GPU (GP102-400-A1), and packs in the full meat tray of shader units and texture units, and almost the maximum render units. As you can see on the table it's quite a jump from the standard 1080's 2560 shaders to the 3584 used on the 1080 Ti (and Titan X). Texture mapping units are also increased considerably over the regular 1080, with 224 vs 160 (again, equal to the Titan). The Titan X only holds a lead for render output units,

> "an absolute ripsnorter, delivering the biggest jump in performace over a standard GPU Nvidia has achieved"

Nvidia Geforce 1080 Ti Benchmarks

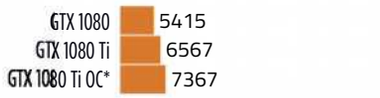
Score

3DMARK Firestrike Ultra

4K (3840 X 2160)

3DMARK Firestrike

1920 X 1080



* 1999.5MHZ CORE, 1501MHZ MEMORY

	SHADERS	TEXTURE UNITS	RENDER UNITS	BASE CLOCK	BOOST CLOCK	MEMORY MT/S	BUS WIDTH
GTX 1080	2560	160	64	1607	1733	10,000	256
GTX 1080 Ti	3584	224	88	1480	1582	11,000	352
Titan X	3584	224	96	1417	1531	10,000	384

but the difference is slight, and largely inconsequential.

Also inconsequential are the differences between the clock speeds. Yes, the standard 1080 has a higher base core clock (1607MHz vs 1480MHz), but thanks in part to a better stock cooling solution and presumably refined manufacturing of the GPU itself, it boosts during gaming to frequencies equal or better than a stock 1080. Better yet – the 1080 Ti appears to welcome aggressive overclocking, which pushes its performance even higher. Our review sample held steady at a lofty 2025MHz, while the memory was easily stable at 1501MHz over the default 1376MHz speed. Temps were solid at 86 degrees while overclocked near the limit, though Nvidia's reference cooler, revving along at 3300rpm (70% of maximum), put out annoyingly high levels noise and heat. In real world use we would definitely wind back the overclock for that reason, knowing that exceptional performance was still on tap, but more bearably.

It's the memory that gives the Ti its second major advantage. Working with memory partner Micron, Nvidia has been able to bump throughput to 11,000 megatransfers per second (MT/s). That's a 10% increase over the standard 1080, and matches the Titan X. But that's not the whole story. Nvidia has also doubled the number of power controlling FETs to deliver more stable performance at higher frequencies. The Titan X still has 1GB more memory in total (12GB vs 11GB), but again, that's not going to make a big difference, and the 11GB onboard the 1080 Ti is sufficient to handle the large textures 4k gaming demands – which further reinforces this card's abilities as a 4k monster. Incidentally, this new GDDR5x memory and the new Micron controller will be used in all new standard GTX 1080 cards manufactured from now on.

Nvidia has delivered a monstrous gaming card with the GTX 1080 Ti. It makes single-card 4k gaming feasible and will eat up anything at standard resolutions no matter how high the detail settings are. It's the new king of cards. *BEN MANSILL* PC

- Smooth 4k performance
- Decently priced
- 35% faster than 1080

- Still expensive
- Loud when overclocked

VERDICT:

The biggest Ti power jump to date and another reason for Titan X owners to feel cheated.

10

SYSTEM

Corsair One Pro gaming PC

Tiny body, big power

PRICE $3149
www.corsair.com

Corsair's no stranger to PC building. Apart from having a wide range of components under its belt, from cases to power supplies, it's also had a go with the Bulldog kit PC. It was an odd first choice for the company, and a product that seemed to be a solution in search of a problem. The same cannot be said for the Corsair One (of which the Pro is the top model), a complete PC solution that is not only powerful, but extremely well-engineered.

There are two things you first notice about the One (which is impossible to type without thinking of The Matrix). The first is that it looks amazing. Its enclosure measures only 12 litres in volume, so it's surprisingly small for what it packs inside, and the matte-black aluminium panels and green lighting from the trim gaps between those panels make for a system that looks both elegant and powerful. And since it's so small, it's also very versatile, at home on or under a desk, or in your loungeroom, for some PC-powered gaming. If you've got a 4K television, and want to expand your gaming setup, the One will not look out of place next to your giant flatscreen. And given the front HDMI slot, it's also ready for convenient VR setup out of the box.

When you turn it on, though, it's also amazingly quiet. This is impressive for a case this size, where you might expect tiny hamster-cage fans whizzing away to keep everything from overheating. The shape of the One allows natural convection to do a lot of the heavy lifting when it comes to cooling, assisted by a fan mounted in the top of the chassis, beneath a grilled and vaned heatsink.

Solid cooling is important, too, as the One Pro is packed with performance parts. Under the hood is an Intel Core i7 7700K backed by 16GB of DDR4 RAM, and an overclocked MSI GTX 1080. Power is courtesy of a custom-made SFX 80-plus Gold PSU, complete with a passively-cooled zero-fan mode. The PSU has been tuned for this particular case interior.

The slim design aesthetic extends to the software side of things, with Corsair delivering very little in the way of bloatware. There's Corsair's handy Link utility and a few game installers, which makes perfect sense given the One's gaming focus. Aside from the operating system, there's very little other clutter on the Corsair-made 1TB SSD that serves as the system's main storage.

Not only did the One handle 3DMark's Firestrike test with aplomb, it did so extremely quietly, able to top out the more intense tests at around 90-100 frames per second, and scoring 8845 overall. In PCMark 8 tests, the One was just as spritely, hitting an impressive 4799, which places it well above the minimum score for not only a solid VR experience, but also a 4K gaming one. And, all the while, the case remained barely audible, and that only in our enclosed, very quiet test-lab. In a real-world environment, with a game or music running, and the sounds of your average house, it's practically silent.

> "the shape of the One allows natural convection to do a lot of the heavy lifting when it comes to cooling"

DAVID HOLLINGWORTH PC

- Small form factor
- Silent performance
- Excellent cooling

- Can't upgrade without voiding warranty

VERDICT:

While we worry about walled gardens, this is a nonetheless beautifully engineered gaming system that is as powerful as it is attractive.

9

HEADSET

HyperX Cloud Revolver S

HyperX should stop naming headsets after guns

PRICE $229
www.hyperxgaming.com

We were big fans of the original Cloud Revolver headset. The stereo performance of that headset is beautifully clear, it's comfortable and looks great. The only major downfall of that headset is the fact that the metal headband rings like a bell when bumped or moved. HyperX has redesigned the Revolver in a number of ways, some small and others substantial when it comes to the new S model. The earcups are matte now instead of shiny, and some rubber baffling stops the headband from righting like a bell. It just thumps loudly now. Thanks god for small mercies, huh? The biggest change is the addition of a USB Dolby Headphone dongle.

Stereo performance of the Revolver S is just as good as it was in the previous model, with a good flat EQ (this can be changes for bass performance or chat if desired) , but the Dolby Headphone virtual 7.1 is where the headset really shines. Much like the earlier Cloud headsets, the virtual surround performance is excellent with clear directionality and a wide, spacious soundscape. The detachable microphone is decent but not Earth-shattering, delivering clear but unremarkable voice for gaming and chat.

The Revolver S is an excellent headset, have no doubt about that, but HyperX has done such a good job over the years making headsets that they are their own worst competitor – the Cloud II is an excellent headset offering many of the same features and can be found for around $100. *DANIEL WILKS* PC

- Sturdy
- Sound great
- Comfortable

- Metal band is still noisy

VERDICT:

An excellent, comfortable, great sounding headset but are the upgrades worth the added price?

8

LAPTOP

Resistance Striker Elite GTX 1070

Australian made gaming

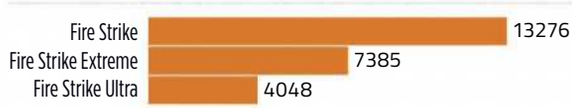
PRICE $3299
www.resistance.com.au

The Resistance Striker Elite is the first laptop we've looked at from the Australian gaming brand, but if the Striker Elite is indicative of the price and performance of the range, we're keen to see more. When it comes to specs, the Elite is no slouch, boasting a 17.3" full HD G-Sync panel, 16Gb of DDR4, an i7-7700HQ CPU and an 8Gb GTX 1070. It's not short on connectivity either, with a Display Port, two USB type C and two USB 3 ports on the left side of the chassis, a second Display Port and an HDMI port on the back and another USB 3 on the right. The chassis is made of both plastic and brushed aluminium,, with the metal used primarily as the screen backing and the wrist rest, making the unit look quite elegant.

In addition to the powerful innards, the Striker Elite also features some neat extra touches that elevate it beyond some of its' similarly specced competitors. Beneath the screen are two decently sized and surprisingly decent Onkyo speakers, and the sound is driven by a Sound Blaster X-Fi 5. The keyboard is fairly standard but does boast some programmable RGB lighting if that floats your boat. When it comes to gaming, the Striker Elite is a bit of a beast. We played quite a bit of Nier and Mass Effect on the machine at max settings and the framerate remained solid throughout. Outputting to a second screen, 1440p ran smoothly at slightly lower settings. As can be expected, battery life is pretty short, but given the size and weight of the machine it's not really something you'll be using on the go. *TAVISH FORREST* PC

Resistance Striker Elite Benchmarks

Score



- Great screen
- 6GB GTX 1070
- Well built

- Heavy
- Short battery life

VERDICT:

A good, solid, powerful gaming laptop for a decent price.

9

INPUT

Roccat Isku+ Force FX

Analogue gaming RGBd

PRICE $159.95
www.roccat.org

The Isku+ Force FX, aside from having a rather clunky name, is an interesting and altogether decent keyboard thanks to a mixture of cost and features. The keyboard features a row of programmable macro keys along the left hand side and another three keys situated under the space bar, as well as multiple profile slots, media controls and RGB lighting, but that is all frills on top of what makes the keyboard so interesting. Although the Isku+ uses decent if somewhat squishy feeling membrane keys, the QWEASD keys can be set to analogue, enabling the force of a keystroke to be measured for finer control in gaming.

While this may sound a bit like a solution to a problem that doesn't really exist, after a brief learning curve, the analogue keys definitely make a difference when it comes to gaming. The keys can be programmed in a number of ways, but the most interesting is when a key is set to have multiple levels of contact – the W can be set to walk and run depending on how far the key is pressed. It's a neat trick and one that Roccat seems to be pursuing in some other upcoming products. It will be interesting to test the technology with smooth linear mechanical keys, as the membrane keys in the Isku+ Force FX (still a mouthful) feel a little short and have too much of an actuation bump to make the analogue features feel natural.

DANIEL WILKS PC

- Feels good
- Budget RGB
- Analogue QWEASD

- Analogue doesn't feel natural

VERDICT:

An interesting and decent keyboard for an equally decent price. A good first step but still needs revision.

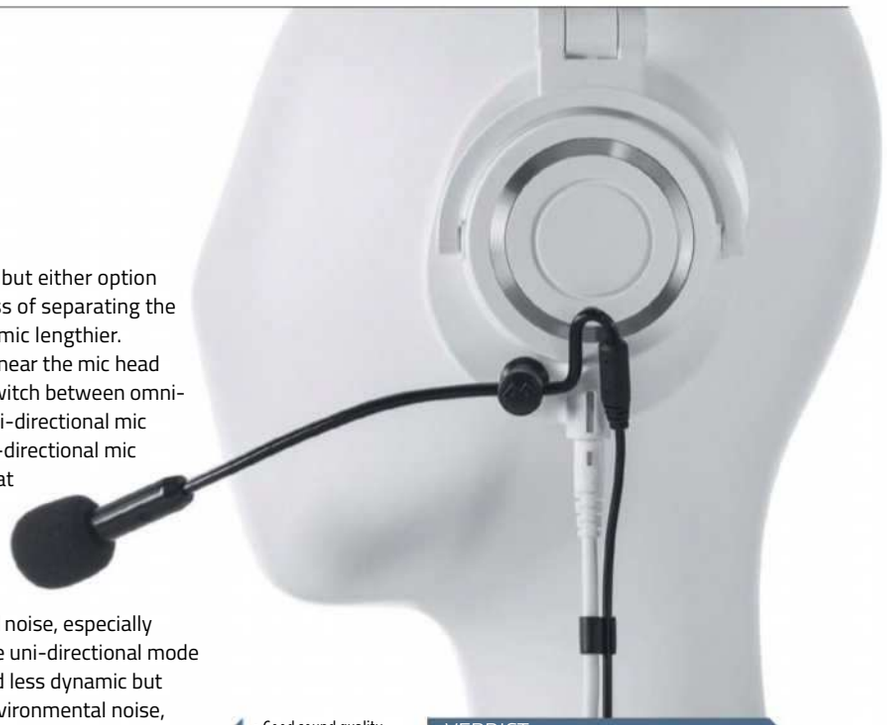
7

MIC

Antlion Modmic 5

The magic of magnets

PRICE $99
antlionaudio.com



The Modmic 5, as the name suggests, is the fifth and latest model of the Modmic, a boom mic attachment designed to turn any set of headphones into a gaming headset. The mic exists in a niche environment but fills the role extremely well, namely those people that have a good set of audio headphones and don't want to have to shell out for an all-in-one gaming headset so they can chat with their friends online. The mic attached to the headphones by way of a small adhesive magnetic clip. Once that is placed on the headphones, the mic itself can be easily attached and detached, so you can still use your headphones for non-gaming purposes. Attaching and detaching the boom is easy, but cable management is a bit of a problem, as attaching the mic adds another cable to the headphones that have to be managed with clips or a cable sleeve, but either option makes the process of separating the headphones and mic lengthier.

A small switch near the mic head allows users to switch between omni-directional and uni-directional mic modes. The omni-directional mic mode sounds great and delivers full sounding and clear voice but does pick up some background noise, especially when gaming. The uni-directional mode sounds flatter and less dynamic but occludes most environmental noise, making the mode better suited for heavy gaming sessions. Despite the slightly awkward cable management, the Modmic 5 is an excellent option for those not wanting to forsake their audiophile cans while playing games.

DANIEL WILKS PC

- Good sound quality
- Two mic modes
- Easy attach

- Cable management
- Uni-directional mic a little flat

VERDICT:

Cable management can be a pain but a good option for audiophiles not wanting to buy a second expensive headset for gaming.

8

INPUT

Roccat Kone EMP

4th dimensional owls

PRICE $99
www.roccat.org

Roccat is using some pretty sweet marketing hype with the new range of mice, touting the performance of the new Owl-Eye sensors. These brand new sensors aren't actually new technology – they are custom Pixart 3360 optical sensor (Roccat calls the sensor a 3361) modified for precision. Basically what this means is that while the Kone EMP is capable of scanning at 1200DPI, it is optimised for use around the 2000DPI mark. The big numbers may look impressive on the back of a box, but few, if any gamers like their sensitivity so crazily high. The result is a nice, fast, accurate mouse that puts the cursor where you want.

The build quality of the Kone EMP is as good as the sensor. It's a big mouse but the size makes it very comfortable, especially if you're a palm gripper. The left and right buttons use Omron switches and have a good click, and the scroll wheel is firm. Again Roccat uses some marketing magic, referring to the scroll wheel as being a "4D Titan". Rather than having dominion over time, the scroll wheel instead can be tilted from side to side, much like the shark fin switches many of the previous Roccat mice featured. It's not the most useful feature but it works well.

In addition to the excellent sensor and general comfort, the Kone EMP also features RGB strips to each side of the mouse. They're understated and elegant for RGBs and we quite like them. Put it all together and you have one hell of a good, straightforward gaming mouse for a very decent price. *DANIEL WILKS* PC

- Excellent sensor
- Comfortable
- Straightforward

- Silly marketing speak
- Large

VERDICT:

Large, comfortable, accurate, well built and attractive and well-priced. What more could you want?

9

INPUT

Cougar Revenger

Something about digging two graves

PRICE TBC AROUND $100
Cougargaming.com

The Cougar Revenger gaming mouse uses an unmodified version of the powerful and accurate Pixart 3360 optical sensor, and even without tweaks it's a cracker. The sensor is accurate and fast and a joy to use when not pumped up to maximum sensitivity. Thanks to the built-in memory, players can have up to three configuration profiles with programmed buttons and DPI settings saved to the mouse at all times. The design of the Revenger, much like the name, is quite aggressive, with a split between the left and right buttons, and those buttons tapering into points.

The Revenger features six programmable buttons; left, right, two thumb buttons, wheel click and the DPI switch. It's the last of these that is really interesting. The DPI switch is designed as a trigger rather than the more typical button and it proves to be a great choice. One common complaint we have with a lot of gaming mice is that it's too easy to accidentally change DPI settings when scrolling the mouse wheel. The trigger is all but impossible to pull accidentally.

As with nearly everything labelled as a gaming peripheral, the Revenger features programmable RGB lighting, but like the Kone EMP, the utilisation of RGBs is quite understated and elegant, with two zones of lighting – a back section featuring the logo and a base strip, and the DPI setting indicator to the side. The Revenger is a nice, straightforward mouse positioned at a good price point. It's comfortable in the hand and accurate. *DANIEL WILKS* PC

- Accurate sensor
- Comfortable
- Trigger switch

- Pointy

VERDICT:

Possibly the best mouse we've seen from Cougar so far. It's comfortable, accurate and (probably) well-priced.

9

HOTWARE 261

with Terrence Jarrad

01

01 Book One

$3500 ▪ Porsche Design

www.porsche-design.com

If the relative success of Microsoft's Surface has taught us anything, it's that there's a market for 2-in-1 style laptop-tablet thingies. So Porsche Design has decided to throw its name out into the market as a contender in this area.

POWERED UP: The usual Core i7-7500, 16GB RAM, 512GB SSD arrangement. Approximately 14 hours battery life. 10-finger multi-touch 3200x1800 IPS display. Anodised aluminium casing. And USB type C connections.

PLAYED OUT: Is listed on the Porsche Design site under the "Men" category. Sorry ladies, you may not use this laptop, it seems.

02

02 The Frame

$TBA ▪ Samsung

www.samsung.com

We don't know art, but we know what we like, and we like this attempt from Samsung to make a television look like art.

POWERED UP: When turned off, instead of presenting a lifeless black screen, The Frame will display something from an internal library of over 100 items featuring everything from action scenes, to drawings, architecture, or landscapes. It also has interchangeable bezels and an optional studio stand, so you can do your utmost to make it fit in with your art collection.

PLAYED OUT: We don't have price but it seems like it will be expensive, especially with extras like bezels. We also can't help wondering what the impact to our power bill will be, running a screen full time.

03

03 Beoncam

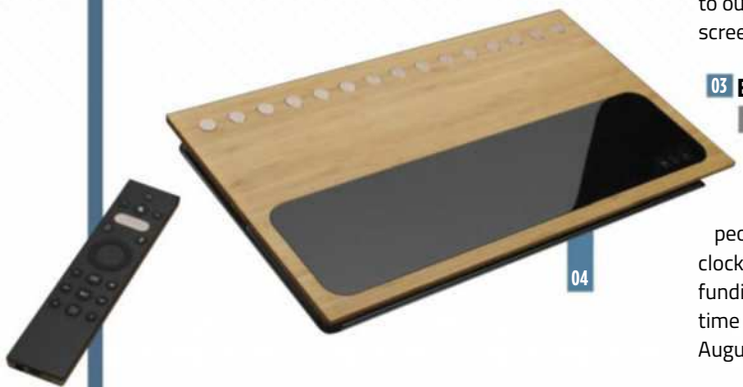
$180 ▪ Beoncam

bit.ly/2nQmk06

A camera you wear on your wrist? Might sound odd but people obviously dig it because it's clocking in at 178% of its IndieGoGo funding with over a week to spare (at time of writing), and is due to ship in August this year.

POWERED UP: Designed with ease of use in mind, Beoncam hopes to capture those impromptu moments that happen too quickly to be caught with a phone. It has 360 degree photo and video capability, a waterproof casing, a microphone and speaker, and will work for 4 days on a single charge.

PLAYED OUT: 720p at around 15fps



04

04 Caavo

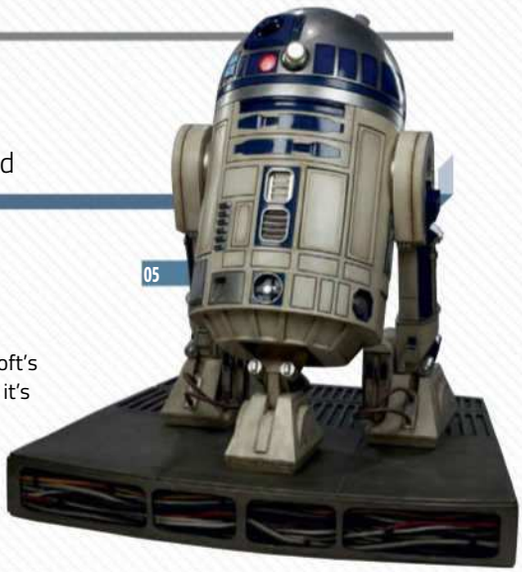
$550 ▪ Caavo

www.caavo.com

How many HDMI devices do you have? How many with streaming apps? Netflix, Stan, Hulu, Amazon? Caavo centralises all your TV content so you don't have to care about which app, on which device you need to load, you just tell it what to watch and it does the rest.

POWERED UP: 8 HDMI inputs which auto detect and switch, ethernet and Wi-Fi connectivity, voice control, and the ability to recognise existing device remotes.

PLAYED OUT: Limited to 5000 units on initial release run.



05

05 R2-D2

$10,000 ▪ Sideshow

www.sideshowtoy.com

It's hardly a Hotware without something Star Warsy, so here, have a life-sized R2-D2 that will set you back 10 large!

POWERED UP: Lights up and makes the appropriate noises (via remote control). This is the droid you're looking for...

PLAYED OUT: ...unless you don't have 10k burning a hole in your pocket, in which case, you can go about your business. Move along. Speaking of which, this is a stationary display, so that's a little disappointing.

THE LAST CASE FANS YOU'LL EVER NEED.

Meet the ultimate PC case fan. The all-new **Thermaltake Riing Plus RGB** fans have been designed from the ground up to deliver ground-breaking cooling performance combined with the world's first true individually programmable 16.8M RGB colours across 12 LED's.

16.8M RGB | QUIET 24.7 dBA | WINDOWS CONTROL

thermaltake

INVENTORY

THE BEST BUILD FOR EVERY BUDGET

CONTROLLERS

Even the PC master race needs control options

Xbox One Controller

$89.95 *microsoft.com/en-au/*

Plug and play meets comfort. Every PC needs a controller and this is the best

Steam Controller

$89.95 *store.steampowered.com*

There's a bit of a learning curve, but it's great for couch gaming

MODEM ROUTERS

For all rational budgets

BUDGET

TP-Link VR600

$179 *tp-link.com*

Not the fastest, but it's stable, well priced and feature packed. ADSL modem built in

Synology Router RT1900ac

$199 *synology.com*

No built in ADSL modem, but it's fast and has the best interface around

PREMIUM

NETGEAR R8000 Nighthawk X6 Tri-Band WiFi Router

$300 *netgear.com.au*

Formerly our pick for the Beast, this router is more than powerful and fast enough for all your gaming needs

LAPTOPS

Gaming on the go

BUDGET

Gigabyte P55W v5

$2099 *gigabyte.com.au*

If you want real gaming performance in a laptop, $2k is where it starts

PREMIUM

Metabox Prime-X

$6899 *metabox.com.au*

The fastest laptop around costs big

MINI

For lounge room gaming and streaming

CPU + COOLING
Intel Core i5 7500 w/ stock cooler
$254
intel.com

MOBO
ASRock Z270M-ITX/AC Motherboard
$200
asrock.com.au

GPU
Asus DUAL-RX480-04G
$338
asus.com.au

MEMORY
16GB DDR4 Corsair Vengeance LPX Low Profile$185
corsair.com/en-au

STORAGE
Samsung SSD M.2 2280 NVMe 250G 960 EVO + 2TB HDD (any)
$178 + $50 *samsung.com/au*

CASE
Fractal Design Define S Nano
$115
fractal-design.com

PSU
SilverStone SFX Gold 500W SX500-LG
$110
Silverstone.com

SOUND
Your sound system
What you paid for it

DISPLAY
Your TV
What you paid for it

KEYBOARD
Roccat Sova
$299
www.roccat.org

MOUSE
Roccat Kone EMP
$99
www.roccat.org

TOTAL: **$1833**

BUDGET

The perfect entry-level gaming PC

CPU + COOLING
Intel Core i5 7500 w/ stock cooler
$254
intel.com

MOBO
ASRock B250 Gaming K4 Motherboard
$150
asrock.com.au

GPU
Gigabyte RX480G1-GAMING-4GD
$279
gigabyte.com.au

MEMORY
G.Skill Ripjaws 4 DDR4 2400MHz 16GB Kit 2x 8GB
$135 *gskill.com*

STORAGE
2TB HDD (any)
$50 *www.staticice.com.au*

CASE
Corsair Carbide SPEC-02 Mid Tower Gaming Case
$70 *corsair.com/en-au*

PSU
SilverStone Strider Essential 500W ST50F-ESB $55
Silverstone.com

SOUND
Cougar Immersa
$59
cougargaming.com

DISPLAY
AOC e2450Swh
$158
aocmonitorap.com/anz

KEYBOARD
Tesoro Tizona G2N
$55
tesorotec.com

MOUSE
Rapoo V20 Optical Gaming Mouse
$35
rapoo.com

TOTAL: **$1300**

ASUS®
No.1 in Quality & Services
The Wall Street Journal Asia
RT-AC5300
Wireless-AC5300
Tri-Band Gigabit Router

The Ryzen is here and it has changed all of our Inventory builds - by lowering the price of Intel chips. This month we also introduce a new build - our mini-PC made for the lounge room for TV gaming and streaming.

PERFORMANCE

Most bells and whistles, without breaking the bank

CPU + COOLING
Intel Core i7 7700K with Noctua NH-D15 CPU Cooler
$459 + $120 *intel.com*

MOBO
MSI Z270 XPOWER Gaming Titanium Motherboard
$510
msi.com

GPU
Asus Strix GTX 1070 OC Gaming 8Gb
$639
asus.com.au

MEMORY
G.Skill RIPJAWS 4 32GB KIT 4X8GB
$289
gskill.com

STORAGE
2TB HDD (any) + SAMSUNG 500GB M.2 NVMe SSD 960 EVO
$375
samsung.com/au

CASE
Corsair Graphite 760T Full Tower Case Black
$220
corsair.com/en-au

PSU
Be Quiet! Dark Power Pro 11 850W Power Supply
$260
bequiet.com

SOUND
Sennheiser PC 373D
$329
en-au.sennheiser.com

DISPLAY
Acer Predator XB271HU
$979
acerstore.com.au

KEYBOARD
HyperX Alloy FPS
$139
hyperxgaming.com

MOUSE
Roccat Kone EMP
$99
www.roccat.org

TOTAL: **$4418**

THE BEAST

When overkill is barely enough...

CPU + COOLING
i7-7700K + Coolermaster Masterliquid Pro
$459 + $133
coolermaster.com

MOBO
AORUS GA-Z270X-GAMING9
$799
gigabyte.com.au

VIDEO
Nvidia GTX 1080Ti
$1129
nvidia.com

MEMORY
2 x 16GB Corsair Vengeance LPX DDR4 3000
$318
corsair.com/en-au

STORAGE
Samsung 960 Pro 2TB + Seagate Barracuda Pro 10TB
$1649 + $699
samsung.com/au

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